

GREATER TORONTO AREA 3Rs ANALYSIS
MUNICIPAL FINANCE TECHNICAL
APPENDIX

DRAFT - NOVEMBER 1993



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Prepared by Future Urban Research
for
Fiscal Planning and Information Management Branch
Ministry of Environment and Energy

DRAFT - NOVEMBER 1993



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1.0 INTRODUCTION

1.1 BACKGROUND

In 1989, the Government of Ontario announced its commitment to meeting a Provincial target of at least 50% reduction of waste going to landfills and incineration by the year 2000. This target, actually a waste diversion target (to be achieved through waste reduction, reuse and recycling -- the 3R's) was confirmed by the present Government in 1990.

To facilitate the achievement of the 50% target, the Province introduced the **Waste Management Act, 1992**. The Act broadens the government's powers to reduce waste sent to disposal through a variety of means. It also vests powers in the Interim Waste Authority (IWA), an agency created to complement 3R's activities, and to ease the waste disposal crisis in the Greater Toronto Area (GTA). The IWA is doing this by conducting environmental assessments to locate three long-term landfill sites in the GTA.

The GTA Regional Municipalities of Peel and Durham are each defined for the IWA as separate "primary service areas". Metropolitan Toronto and the Regional Municipality of York have been defined as a separate combined primary service area. Each of the three defined primary service areas is proposed to receive one new landfill facility through the IWA process. The fifth GTA Regional Municipality, Halton, has already obtained approval for a landfill site and thus is not part of the siting process.

1.2 PURPOSE OF THE STUDY

This study has two purposes, each of which relates directly to a requirement created by the **Waste Management Act**.

The first requirement pertains to waste estimates. The **Waste Management Act** (s.14) requires the Minister of the Environment and Energy to provide a written estimate as to:

- a) the amount of waste the would otherwise be expected to be generated in the primary service area (i.e. each of Peel, Durham and Metro/York) during

a twenty-year period that will not be generated because of waste reduction efforts; and

- b) the amount of waste that will be generated in the primary service area during a twenty-year period that will not need to be disposed of in the site because of the reuse or recycling of materials that are or could become waste.

Initial estimates of a) and b) above have been provided to the IWA by the Minister. The current study provides additional analysis of 3R's activities, in support of the waste diversion estimates previously provided.

The second requirement pertains to analyzing the 3R's as "alternatives to" landfill waste disposal sites. Section 15 of the **Waste Management Act** requires that the IWA environmental assessments contain a description of, and a statement of rationale and evaluation to the IWA for use in its environmental assessments. The present report fulfils this requirement.

1.3 STUDY APPROACH

The purpose of the GTA 3R's Analysis is to identify and evaluate alternative 3R's systems, comprised of combinations of 3R's programs, technologies and practices, that could reasonably be implemented in the GTA. It is also to determine the potential for each 3R's system to divert waste over the twenty-year minimum life expectancy of the GTA landfill sites and identifies the advantages and disadvantages of each system.

For the purpose of the present analysis, alternative 3R's systems have been identified for residential wastes, as well as for industrial, commercial and institutional (IC&I) wastes. For each system, estimates of the amount of waste the system could potentially divert from disposal have been determined. An evaluation, done on a non-site-specific, generic level and documented in this report, identifies the advantages and disadvantages to the environment of each potential 3R's system.

The results of this study will be used by the IWA in its environmental assessments, which will ultimately be submitted to the Ministry of Environment and Energy (MOEE) for review and approval. In conducting the 3R's work, and providing estimates of waste that will not require landfilling in the IWA established sites, MOEE is acting as a reliable authority in accordance with its legislative mandate, and not as the proponent or co-proponent of any of the 3R's systems discussed. The alternatives presented in this report are not in any way structured as detailed implementation plans for the Province, the Regions or the private sector.

1.4 PURPOSE OF THE MUNICIPAL FINANCE ASSESSMENT

This technical appendix details and documents the municipal finance component of the GTA 3R's analysis. Municipal finance effects are defined as the potential for changes to the financial resources and plans of the municipalities; the costs and capital expenditures, and other financial mechanisms and arrangements.

The primary purpose of this municipal finance assessment is to identify and assess the effects on the regional and local municipalities, and more specifically to the constituent taxpayers, which may occur as a result of the implementation of a 3R's system within each of the four regional municipalities (Metro Toronto, Peel, York and Durham). The results of this assessment are to serve as input into the overall 3R's systems evaluation.

The study objectives of the municipal finance assessment are as follows:

- * Identification of existing financial conditions within each of the regional municipalities.
- * Projection and quantification of municipal finance effects as a result of the implementation of any of the alternative 3R's systems within each of the regional municipalities.
- * Analysis of the potential municipal finance effects including the development of mitigation measures for the purposes of identifying net effects.
- * Identification of the highest ranked system in each of the regional municipalities from a municipal finance perspective.

1.5 OUTLINE OF REPORT

Chapter 2 presents the study approach used in the municipal finance assessment.

Chapter 3 provides a general description of the existing diversion activities, costs and financial mechanisms in the Regions of Halton, Durham, York, Peel and Metro Toronto including any Provincial and private funding present. It also details future waste diversion commitments in each of the Regions.

Chapter 4 provides a general description of the municipal finance conditions existing in the Regions of Halton, Durham, York, Peel and Metro Toronto.

Chapter 5 details the results of the assessment of the alternative 3R's systems from a municipal finance perspective.

2.0 APPROACH

2.1 METHOD AND TECHNIQUES OF ANALYSIS

The Ministry of the Environment and Energy (MOEE) has identified several key study components. These include:

- * A description of the existing situation for solid waste generation, diversion and disposal in the GTA (the Base Case);
- * Criteria needed for evaluating alternative diversion scenarios;
- * The effects of the current, or Status Quo ("Do-Nothing-More"), alternative to future waste diversion;
- * Future 3R's alternative systems;
- * Evaluation of net environmental effects of alternatives;
- * Waste diversion estimates for IWA use.

To address the municipal finance component, a similar project flow has been used to evaluate the alternative waste diversion systems. The following steps have been identified as necessary municipal finance study components:

- * establish the base case situation by examining the existing financial situation in each of the GTA Region's and local municipalities;
- * quantify the future plans and financial resources intended to be committed to waste diversion in each municipality;
- * include other future costs and capital expenditures that are priority items in these municipalities;
- * test the financial ability of the GTA municipalities to participate in the 3R's alternative systems;
- * isolate the full extent of financial commitment that the municipalities may be able to commit to further waste diversion;
- * estimate the effect of each of the alternative diversion systems on the municipal finance structure.

To establish the existing situation and to determine future trends for analytical purposes, information gathered for each municipality included:

- * Operating Budgets
- * Capital Budgets with Multi-Year Forecasts
- * Property Assessment Valuations
- * Property Assessment Growth Trends
- * Revenue Sources and Profiles
- * General Tax Levy Details
- * Household Property Tax Levels
- * Operating Expenditure Profiles
- * Waste Collection, Disposal and Diversion Expenditure Details
- * Debt and Debenture Levels
- * Debt Capacity and Allowable Borrowing Ratios
- * Reserve Fund Positions

This information was augmented through personal interviews with finance officials and other relevant staff in most of the municipalities. The discussions included future trends, priorities, expenditures, etc. for waste diversion and other municipal services. (A complete list of persons interviewed is contained in Schedule G of this report.)

2.2 ALTERNATIVE SYSTEM ANALYSIS

As described above, the study process first established the base case financial profile for each of the GTA Regions and local area municipalities. The process of pre-screening and evaluation of each of the alternative diversion systems consisted of adding the associated costs and revenues for each diversion option to the base financial profiles. The level of magnitude resulting from the analysis of the alternative system suggests the degree of impact that the option may have on the sponsor municipalities.

At the time that this report was prepared, municipal financial statements and, specifically, the Financial Information Returns for 1992 were not yet completed. Therefore, the Province's MARS (Municipal Archive Retrieval System) data base was used as the principal data source to compile municipal financial profiles. Moreover, 1990 represented the most complete and verified year for data accumulation.

However, it was determined that it was important for the analysis to be as current as possible. Since the inception of recycling and other diversion activities in the GTA municipalities in the late 1980's, significant advances and considerable effort in resources and budget dollars have been made. As a result, it was determined that financial information relating to waste diversion activities in the GTA municipalities should at least represent 1992 data.

Since a profile founded on 1990 data cannot capture the recent efforts in recycling and waste diversion over the last two years, the base year data was adjusted for analytical

purposes. To bring the financial information for waste diversion up to date, the base year's data was adjusted to reflect the most recent activities occurring in waste diversion. To do this, the 1992 Current Operating Budgets for each of the GTA Regions and area municipalities for waste diversion were added to the base 1990 financial information (net of 1990 waste diversion activities). This, therefore, allowed for a current comparison of alternative diversion systems. More importantly, this process did not exaggerate the effect of future diversion alternatives on old 1990 levels of service, but instead, uses the more current levels of service now being offered in the GTA municipalities. Prior to the finalization of this report, the base data will be up-dated to reflect the most recent information possible.

2.3 DATA USED IN THE ANALYSIS

As indicated, the principal source of information for the base financial profiles was the Province's MARS (Municipal Archive Retrieval System) data base for 1990. This system includes data from the Financial Information Return which is mandatory information submitted by all municipalities in Ontario.

In addition, to the MARS information, the following list provides the information compiled for each Region and area municipality:

- * Current Budget Summaries for municipal operations for 1990, 1991, 1992 and 1993 where possible
- * Capital Budget Summaries and Four Year Forecasts for 1990, 1991, 1992 and 1993 where possible
- * Detailed Current Budgets for waste diversion activities for 1990, 1991, 1992 and 1993 where possible
- * Detailed Capital Budgets and Four Year Forecasts for diversion activities for 1990, 1991, 1992 and 1993 where possible
- * The most recent Financial Information Return
- * The Development Charges Background Study Report if it contained a waste or waste diversion component
- * Other relevant waste diversion reports if applicable

In addition to this information, data was also obtained from the other consultant team members. Specifically, demographic and economic information was obtained from Hardy Stevenson and Associates and waste diversion logistics and volume information was obtained from Resource Integration Systems Limited. Further, the actual alternative system options were obtained from Resource Integration Systems Limited.

Each technical appendix for the other study components were prepared, reviewed and revised concurrently. As a result, some revised information contained in the technical appendices reporting on alternative system cost and service (tonnage and diversion rates) is not wholly incorporated into this document. These revisions mostly represent minor differences in figures and should not significantly affect the result of this analysis. These revised information items will be incorporated into this municipal finance technical appendix when it is finalized after the public consultation stage of the EA process.

2.4 MAJOR ASSUMPTIONS USED IN THE ANALYSIS

The analysis implicitly deals with a long planning horizon. While the IWA landfill facilities may be in place by 1996 or 1997, the waste diversion alternatives examined in this report may not be implemented within the same time period. In fact, for some system alternatives, a fully operational option may not be possible until later in the 1990's. As a result, estimating the financial effects of these future programs over such a long time frame becomes subject to a large number of exogenous variables. That is, external factors that are largely beyond the control of the analysis itself and could change in the future.

If any or all of these factors change significantly, the results of the analysis could similarly change. As time progresses, gauging the amount of change will primarily become a question of the magnitude. Based on this, the analysis may have to be revised or updated in the future.

This analysis, while based on the most recent information available, has several implicit assumptions. These assumptions relate to: economic conditions (inflation, borrowing costs, commercial and industrial growth, etc.); demographic growth; normal Provincial operating grants; and, the growth and consistency of municipal expenditures and revenue profiles. Two implicit assumptions, however, require further comment.

1. It will be demonstrated in the following chapter of this report that the financing arrangements between waste disposal and waste diversion in the GTA can become quite inter-dependant. For example, in Peel Region excess tipping fee revenue is used to offset waste diversion costs. Similarly in York Region, while a small recycling processing fee has now been adopted, several of the other diversion programs are funded, via reserve funds, which stem from the royalties received from Metro Toronto.

This analysis assumes that the current financing arrangement will continue in the future, if and when the IWA site becomes operable.

Further, this suggests:

- a) some other agency, such as the IWA, may continue royalty payments in amounts sufficient to fund current programs and therefore only the net cost of alternative systems examined in this report would have a financial effect on the rate payers in the municipality; or
 - b) in the absence of external funding, overall costs to the rate payers may rise, but this is not a result of alternative waste diversion systems being advanced. Instead, only the net cost of the diversion alternative need be examined because other costs are the result of structural changes within, or upon, the municipality.
2. Waste diversion is handled quite differently from one Region to the next. For example, Durham Region is responsible for both collection and processing of recyclable material. In the Region of York, however, the lower tier is responsible for collection and, as of April, 1993, all material will be brought to the Regional processing centre.

In actuality, these arrangements may not continue in the future. Changes to the structure are now occurring in Metro Toronto. Similar to the reasoning used above, overall costs to the ratepayers may rise due to structural or cost sharing changes, but again, this is not a result of alternative waste diversion systems being advanced in this report.

2.5 IMPACT CRITERIA

A formal procedure was used to evaluate the alternative systems. Future Urban Research utilized criteria and indicators to assess the systems by identifying the financial elements that would most likely be affected by changes to the municipal financial structure. The following represents the criteria and indicators used in the Municipal Finance component.

Criteria:	Potential Impact on Local Taxpayers
Indicators:	Total Increase in Net General Municipal Levy Net General Municipal Levy, adjusted for commercial/industrial property assessment, expressed on a per household basis
Rationale:	To avoid unnecessary or burdensome costs to the local residents, the criterion focuses on determining cost effective system alternatives that minimize taxes and local charges. Further, it addresses the goal of minimizing impacts on human communities.

Criteria: Potential Impact on Municipal Reserve Funds

Indicators: Total Amount of Reserve Funds

Reserves per Household

Reserves as a Percentage of Operating Expenditures

Rationale: Internal financing strategies to avoid debt or taxes decreases the effectiveness of reserve fund financing for other municipal priorities and reduces the municipality's ability to offset unexpected budget expenditures. Further, it addresses the goal of minimizing impacts on communities.

Criteria: Potential for Impact on the Level of Municipal Service

Indicators: Total Municipal Wages, Salaries, Materials & Contract Expenditures per Household

Current Expenditures by Department per Household

Rationale: Paying the same for less service is the same as a cost increase. To avoid an unnecessary debt burden to the local residents and allow for other local capital spending priorities, the criteria focuses on determining cost effective system alternatives that minimize debt burden. Further, it addresses the goal of minimizing impacts on human communities.

Criteria: Potential for Impact on the Provincial Treasury

Indicators: Amount of Provincial Funding

Rationale: To completely capture the potential effect of system alternatives on the people of Ontario and to avoid an unnecessary or burdensome cost to either the local municipalities, or the private sector, the criteria focuses on determining cost effective alternatives in terms of Provincial mitigation. Further, it addresses the goal of minimizing impacts on human communities.

During the course of this study, however, it was found that reliance on this criteria had to be lessened. Due to budget and social contract considerations, the amount of grant funding beyond the current Provincial fiscal year is uncertain. In the extreme, the Province may find it necessary to address the funding assistance of each 3R's alternative examined in this study on a case-by-case basis. Due to this, evaluations under this criteria became indeterminate. Actual resolution may possibly depend on actual funding negotiations with each Region.

Criteria: Potential for Impact on Private Sector Industries

Indicators: Amount of Private Sector Funding

Amount of Private Sector Costs

Amount of Costs Passed on Through Higher Prices

Amount of Private Sector Costs Financed Through Taxes, Incentives, Economies etc.

Rationale: To avoid unnecessary or burdensome costs being passed on to the

private sector from the public sector, the criteria focuses on capturing the potential social effects on consumers while determining the system alternative cost on private sector industries within the GTA.

Criteria: Potential for Impact on the Debt Burden on the Municipality

Indicators: Amount of Debenture Debt

Annual Debt Payments as a Percentage of Expenditures

Available Debt Capacity (former OMB/MMA guideline)

Rationale: To avoid an unnecessary debt burden to local residents and allow for other local capital spending practices, the criteria focuses on determining cost effective system alternatives that minimize debt burdens. This in turn also minimizes future taxes and local changes to be paid by residents. Further, it addresses the goal of minimizing impacts on human communities.

Comparing waste diversion activities from one Region to the next shows very different ways of organizing and financing municipal operations. Therefore, prior to describing the base financial profiles of the GTA municipalities, the waste diversion activities in each of the Regions have been outlined in the following chapter. This chapter includes the total cost of diversion activities in the GTA. The financial profiles for each municipality are presented in Chapter 4 of this report.

3.0 EXISTING CONDITIONS

In most all municipalities in Ontario, the 1993 budget approval process was highlighted by fiscal restraint. In the GTA municipalities, considerable efforts were placed on keeping budgets at prior year levels, if not lower. For these reasons, the cost of waste diversion and the Blue Box program received significant attention.

Due to the fiscal importance of waste diversion, this chapter first describes the financial mechanisms used by each of the GTA Regions to finance diversion operations. This description shows that each Region finances diversion programs differently. Notwithstanding these differences, however, portions of the cost of diversion in each Region must be ultimately borne by local residents. The costs borne by local residents are also summarized in this chapter.

The chapter then describes future financial trends in the GTA along with future waste diversion commitments. With this base, the report then examines the effects of the future waste commitments in terms of the criteria and indicators previously designed to isolate financial effects.

While the following focuses on the Regions directly affected by the I.W.A. landfill sites, the Region of Halton is also included in this comparative analysis as it is also a GTA region that undertakes significant waste diversion activities. By including Halton Region in this comparison, a complete picture of the various 3R's activities in the GTA can be obtained and the differing costs and funding mechanisms can also be shown. In this way, a complete picture of 3R's activity in the GTA can be presented.

3.1 ANALYSIS OF EXISTING SYSTEM

3.1.1 Financial Mechanisms

On an operational level, the upper tier Regions in the GTA have jurisdiction over waste diversion processing, while the local municipalities are largely responsible for Blue Box

collection. In financial terms, however, the mechanism in each Region can become quite tangled and, in most cases, the upper tier assumes full financial responsibility for diversion activities. This structure, though, has been challenged recently. For example, at present North York and Metropolitan Toronto disagree on specific jurisdictional roles. Moreover, due to the lack of funds, the financial mechanism in Metro may change in the near future. Also, the relationship in Peel may be revised in the near future. The dynamics of the financial situation underscore the need for a description of the relationships involved.

Durham Region

Figure 1 shows that financial responsibility in terms of funding 3R's in Durham remains the responsibility of the Region. That is, while the area municipalities undertake all Blue Box collections, Durham Region reimburses each via its Waste Management Reserve. To this end, payments to the area municipalities in 1992 approached \$1.7 million. In terms of processing, the Region also assumes full financial responsibility. A tipping fee of \$105.00 per tonne was charged in 1992 to each municipality for recyclable materials delivered to the Durham Recycling Centre. The tipping fee, however, does not necessarily cover the total costs of collecting and processing recyclable materials. Operating shortfalls are financed through the Waste Management Reserve and in 1992 this contribution totalled \$5,147,800. Due to this sizable amount, during its budget deliberations Durham Regional staff were considering establishing a fully self-sufficient recycling tipping fees that would finance all diversion costs. If fully costed, this tipping fee would approach \$250.00 per tonne.

Since Regional Council adopted the 1993 Durham budget, Metropolitan Toronto revised its waste disposal fee that is charged to Durham Region (and subject to rebate) from \$152.00 per tonne to \$90.00 per tonne. As a result of this action, Durham Region is now considering reducing its recycling processing fee from \$105.00 per tonne to \$75.00 per tonne.

Metropolitan Toronto

For the last five years, the financial responsibility for the transfer and collection of diversion material remained with Metro, while the processing of recyclable material is directly a Metro responsibility. In the past few years, the local municipalities undertook the collection of Blue Box material and the Cities of North York, Scarborough and Etobicoke operated their own composting and transfer facilities. Moreover, Metro compensated the local municipalities for their collection costs. Metro similarly offset the three municipalities for the costs of the composting centres through a diversion credit system (at \$26.50 per tonne for leaves and \$35.00 per tonne for yard waste). That is, the municipalities were paid according to the volumes processed. (During this same time, the City of Toronto did not take part in the direct Blue Box collection compensation program, but rather operated on a diversion credit system.) The funds for the diversion credits and Blue Box collection were drawn from the private sector tipping fees at the Keele Valley and Brock Road landfill sites, via Metro's Waste Management Reserve.

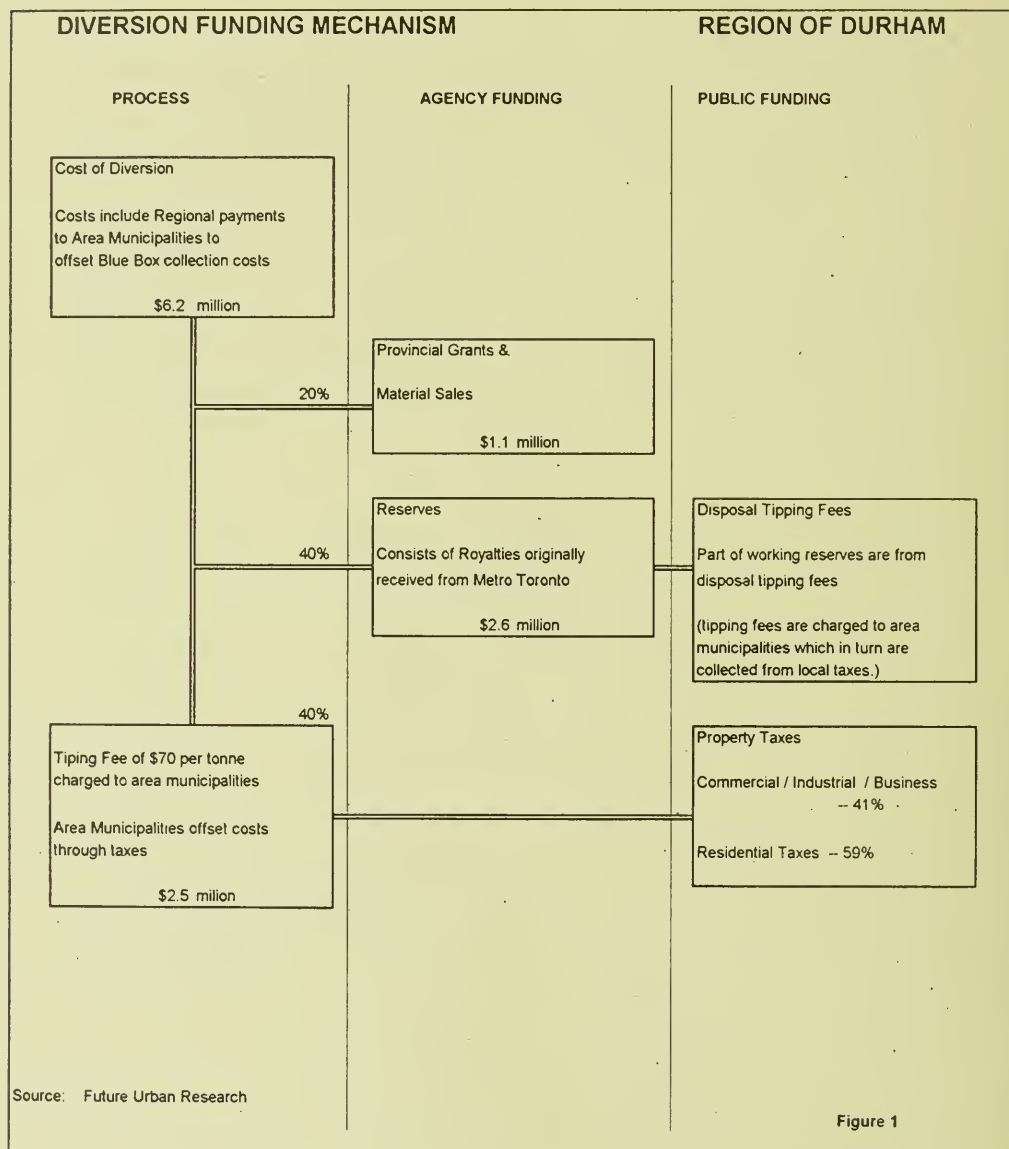
York Region

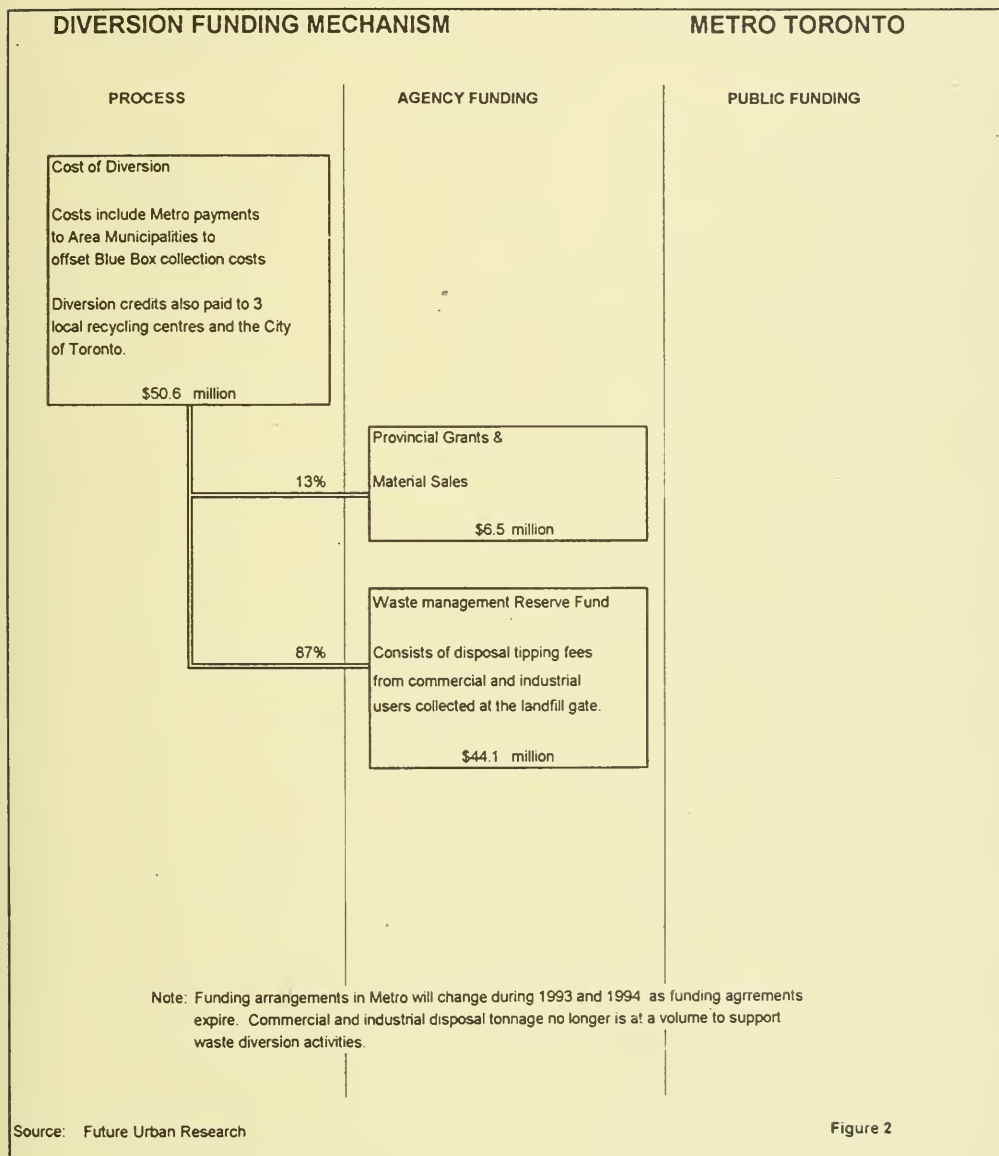
The financial responsibility for funding 3R's is slightly different in each of the nine area municipalities due to the fact that each municipality offers slightly different 3R's programs and facilities. However, for the most part in York Region, the area municipalities assume financial responsibility for collection which is funded through the local municipal levy. In 1992, the area municipalities also assumed financial responsibility for diversion processing. The costs for processing were based on a cost sharing approach. Each municipality was assessed the gross cost of processing less the revenues received from sale of materials. The costs were allocated to each municipality based on population, and not actual tonnage. This net cost was financed through municipal taxes. It should be noted that, in 1992, the Region of York assumed financial responsibility for the household hazardous waste and the organic yard waste programs. A tipping fee was charged for both programs, but it does not cover the operating costs of the programs. As a result, the shortfall was funded by the Regional Waste Management Reserve Fund. This fund consisted mainly of royalty revenue received from Metropolitan Toronto for the Keele Valley Landfill site.

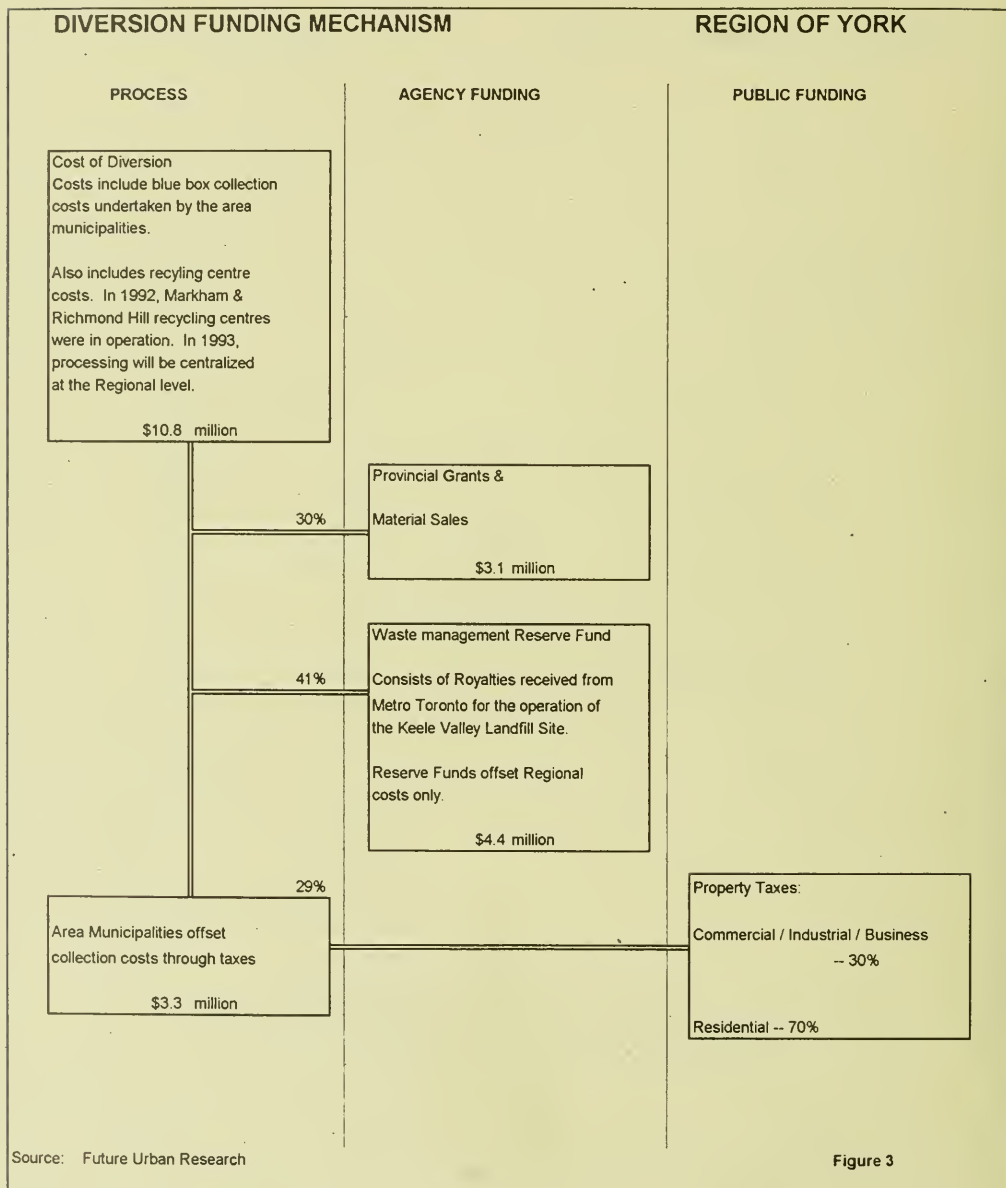
Peel Region

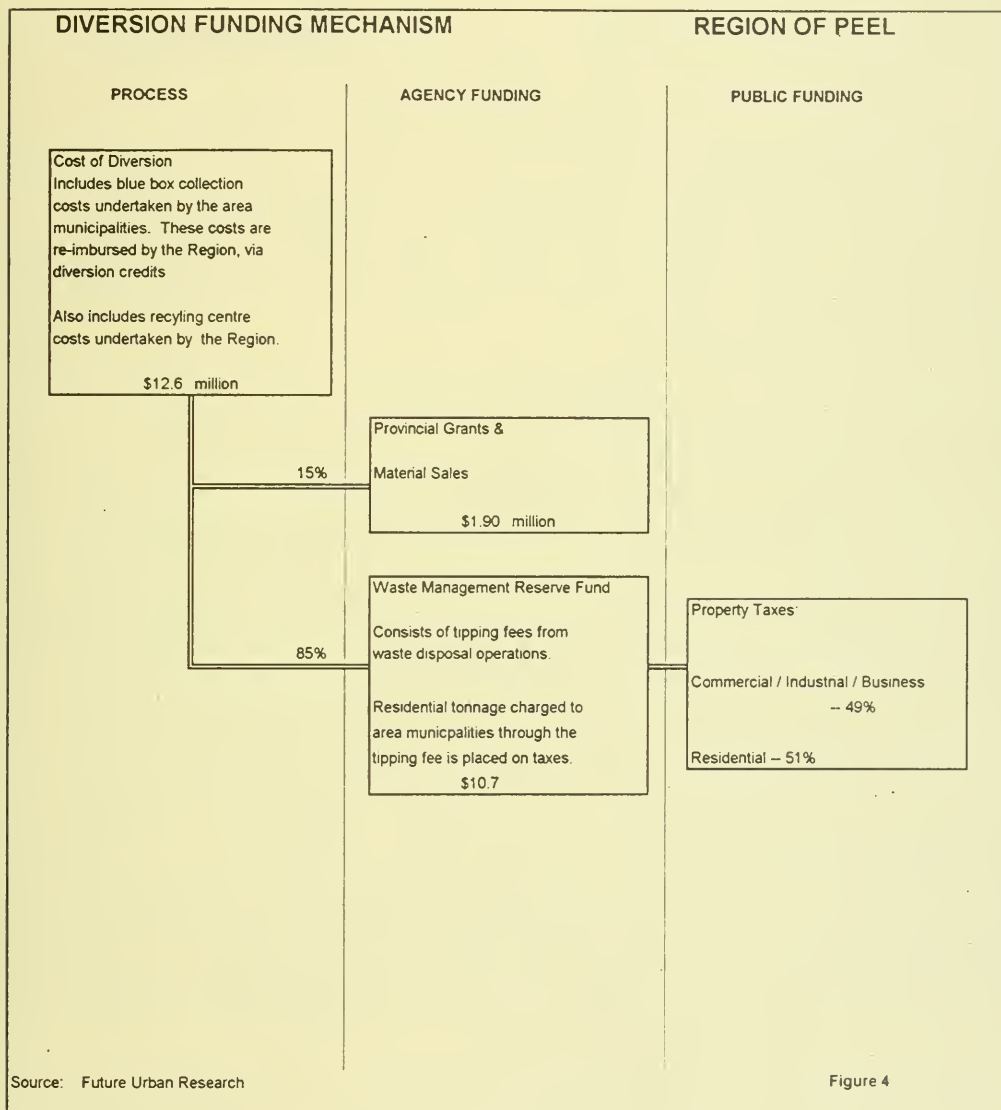
Since January, 1991 financial responsibility in terms of funding 3R's has been a Regional responsibility. The Region assumes financial responsibility for collection and processing which is funded through the reserve which was accumulated from the tipping fee charged for landfill waste (since 1978). The Region funds the net collection and processing costs, that is, the cost after any revenues received from the sale of recyclable materials and grants. This is shown on Figure 4.

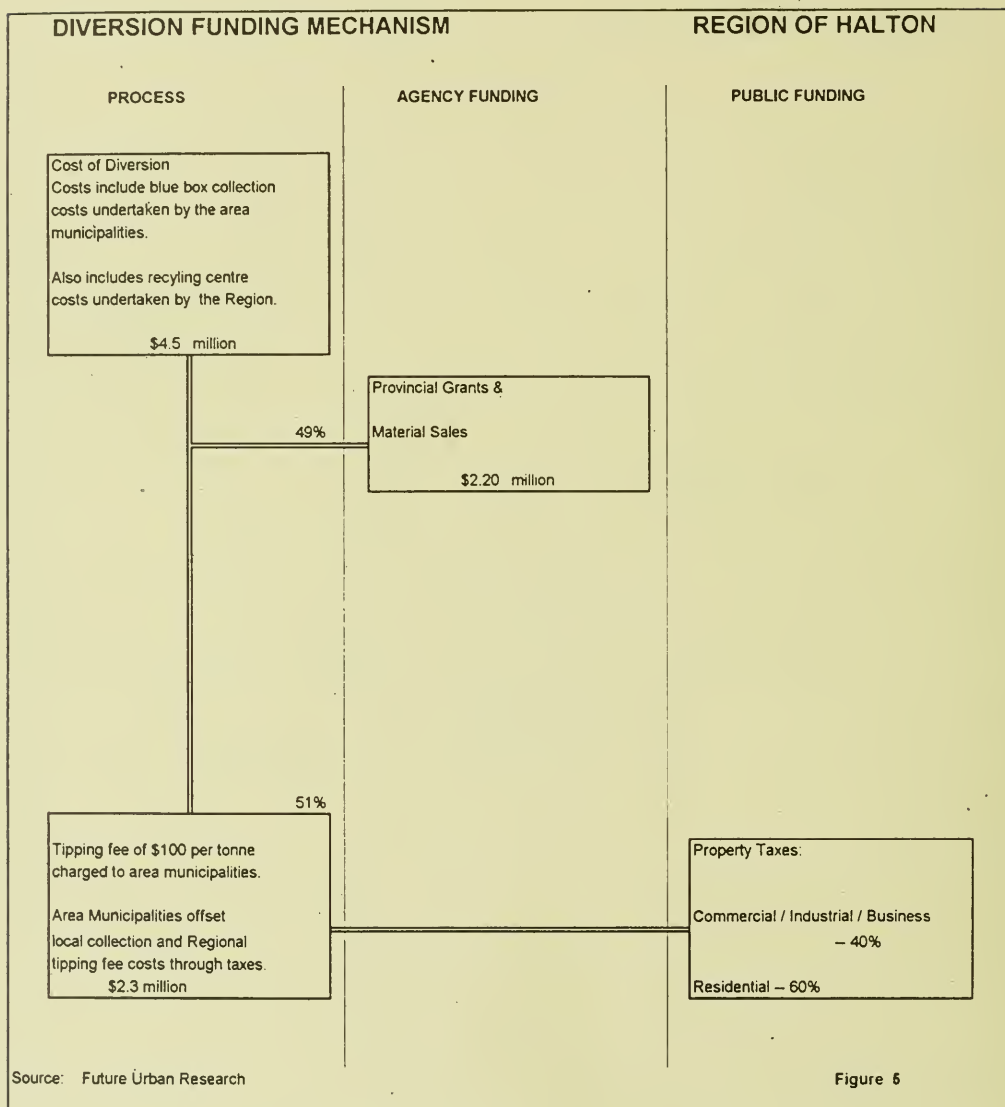
The administration of the 3R's programs in Peel Region is handled by the three area municipalities. These municipalities arrange the physical collection and processing of recyclable materials. All three area municipalities are responsible for, and actively participate in, the residential Blue Box program (although the type of material accepted varies). The area municipalities have also expanded their residential program to include "special" residential wastes. Materials collected from each municipal special residential collection program include leaves, Christmas trees, brush and phone books. In addition to the residential Blue Box program, Caledon implemented a town wide user pay recycling system for its industrial and commercial sectors in late 1991. With the exception of Bolton, collection of recyclables is incorporated into Caledon's regular residential collection system.











Halton Region

Financial responsibility in terms of funding 3R's is entangled, and slightly different in each of the four area municipalities due to the fact that each municipality offers slightly different 3R's programs and facilities. However, for the most part, in Halton, the Region assumes financial responsibility for Blue Box collection which is funded through the Regional levy. In terms of processing, the Region also assumes financial responsibility. A tipping fee of \$100.00 per tonne is charged to each municipality for recyclable materials delivered to the Halton MRF. The tipping fee charged does not necessarily cover the total costs of administering and collecting recyclable materials. The tipping fee charged to each municipality is subsequently financed through local property taxes. This is shown on Figure 5.

3.2 THE COST OF DIVERSION ACTIVITIES IN THE GTA

Table 3-1 summarizes waste diversion costs in the GTA. It is compiled from 1992 operating budgets of all relevant municipalities, grouped by Regions, and includes both collection at the local level and processing operations at the Regional level. A complete municipal breakdown is shown in Schedule B.

The purpose of this table is to demonstrate the net cost of diversion activities in each of the GTA Regions on the tax payers within the Regions. The table therefore excludes the various financing sources that Regions may use to offset costs, such as, tipping fees or reserve fund financing. This is presented in this manner because regardless of internal (local) financing, all charges ultimately are borne by the local taxpayer, after outside funding sources are taken into account. Therefore, this table takes items into account such as, material sales and Provincial funding sources, but excludes any internal financing, diversion credits, etc. As such, the summary is similar to the details of the financing mechanisms shown in Figures 1 through 5.

Table 3-1 is also subject to the different reporting practices in each of the GTA municipalities. For example, while some municipalities report overhead items such as vehicle or property insurance, gasoline, depot costs, etc., as administrative items; others pro-rate these types of costs directly against the collection or processing function. Also, Table 3-1 reflects the amount of commercial, industrial and business taxes paid at the local level so that a clear determination could be made of the remaining net household costs.

GTA 3R ANALYSIS TOTAL WASTE DIVERSION COSTS (1992 Budget)						Table 3-1		
(in dollars)	Gross Cost	Rev & Grants	Net Cost	Residential Share of Taxes	Residential Costs	1991 House- holds	Tonnage	Residential Cost Per Household
								Net
Halton Region Total Costs	4,463,300	2,200,000	2,263,300	60%	1,357,980	106,420	27,000	13
Durham Region Total Costs	6,190,420	1,139,100	5,051,320	59%	2,980,279	136,135	38,805	22
York Region Total Costs	10,848,341	3,077,640	7,770,701	70%	5,439,491	150,485	56,454	36
Peel Region Total Costs	12,622,910	1,955,000	10,667,910	51%	5,440,634	229,670	60,559	24
Metro Toronto Total Costs	50,687,042	6,452,300	44,234,742	48%	21,232,676	864,555	209,682	25
Total GTA	84,812,013	14,824,040	69,987,973	52%	36,451,060	1,487,265	392,500	25
Total GTA Excl Metr	34,124,971	8,371,740	25,753,231	59%	15,218,384	622,710	182,618	24
Source: 1992 Current Operating Municipal Budgets								

In total, waste diversion efforts in 1992 cost \$84,812,013 million when the whole GTA is taken together. While costs in Metro approached \$50,687,042 million, diversion costs approached \$34,124,971 in the rest of the GTA Regions. This included: Peel Region - \$12,622,910 million, York Region - \$10,848,341 million, Durham Region - \$6,190,420 million and Halton Region - \$4,463,300 million.

After material sales and MOEE funding of \$14,824,040 million are considered, net operating costs approached \$69,987,973 million. While net costs in Metro totaled \$44,234,742 million, net costs for the rest of the GTA Regions total \$25,753,231 million. This is comprised of: Peel Region - \$10,667,910 million, York Region - \$7,770,701 million, Durham Region - \$5,051,320 million and Halton Region \$2,263,300 million.

In 1992, total tonnage processed in the GTA approached 392,500 tonnes, with 209,682 processed within Metro and 182,818 processed in the rest of the GTA Regions. As a result, Table 3-1 also presents diversion costs on a household basis. To determine the household cost of diversion, a non-residential share of net costs was excluded from the calculations. This was done to reflect the fact that the a portion of local taxes is paid by the commercial/industrial sector. Throughout the GTA, net diversion costs in 1992 averaged \$25.00 per household. This amount ranged from \$25 per household in Metro to \$24 per household in the rest of the GTA. Regionally, household costs were: Peel - \$24 per household, York - \$36 per household, Durham - \$22 per household and Halton \$13 per household.

Table 3-2 shows the individual per household costs for waste diversion as compared to the household municipal tax levels (excluding schools). It is pointed out that not all of these costs are directly funded by the individual tax levies. In some Regions these costs are either funded by tipping fees and/or reserve fund contributions. This table demonstrates, however, the relative magnitudes of net waste diversion costs as compared to municipal taxation. (Municipal taxation figures are detailed in Chapter 4 of this report entitled Municipal Finance Profiles.)

It can also be shown that household cost figures for each Region for total waste management (disposal and diversion) used by Resource Integration Systems Ltd., in their technical appendices, can be reconciled with the figures presented here. A complete reconciliation is presented in Schedule E to this report and includes items such as, overhead costs and commercial property tax contributions.

Table 3-2

**Per Household Waste Diversion Costs
Compared to Municipal Taxation
(Excluding School Levies)**

	Taxation	Cost of Diversion	Percent
Durham Region	\$1,032	\$22	2.1%
Metro Toronto	1,015	25	2.5%
York Region	1,041	36	3.5%
Peel Region	942	24	2.5%
Halton Region	1,059	13	1.2%

Source: Future Urban Research

3.3 WASTE DIVERSION IN THE GTA

Each of the five regional municipalities in the Greater Toronto Area are actively engaged in waste diversion activities to help achieve Provincial waste diversion targets. The following section describes waste diversion programs/facilities currently in place within the GTA. In addition, due to the fact that waste diversion costs are directly affected by landfill tipping fees or avoided disposal costs, our analysis has included a review of the current landfill waste programs/facilities within the GTA.

Historically, waste disposal services were available at cost while recycling activities were determined primarily by prices paid for secondary materials, collection and processing costs. However, waste management (disposal and diversion) is now entangled. The tipping fees charged for landfill disposal are not cost based but are set as deterrent prices or for revenue generation purposes designed to help fund recycling activities. For example, in Peel, municipal recycling is funded through the Regional Working Fund

Reserve, which has accumulated from the excess of the landfill tipping fee charged, over the cost to dispose. Further, in Halton Region it is estimated that in 1993 approximately \$53.00 of its landfill disposal tipping fee will finance 3R's programs.

3.3.1 The Regional Municipality of Durham

The Region of Durham has implemented the following programs/facilities to divert waste from landfill:

- * bi-weekly Blue Box recycling program;
- * Igloo program that services both rural and high traffic urban public areas;
- * household hazardous waste (HHW) programs including drop offs operated by Metro at various transfer stations;
- * residential backyard composting program;
- * waste reduction education program including display and promotional materials;
- * residential leaf and yard waste collection and composting programs;
- * reuse and donation centres located at the landfill sites and Regional transfer stations;
- * depots for white goods etc. and container stations situated throughout the Region;
- * Durham Recycling Centre(MRF) owned and operated by the Region.

In 1992, 141,896 tonnes of residential waste were generated. Of this, 38,805 tonnes were diverted from landfill and 103,091 were disposed, equating to a diversion rate of approximately 27% for residential waste. A similar volume of waste disposal has been forecast for 1993, since the Region is not planning to establish new diversion programs or up-grade existing programs or service coverage, to the level whereby diversion rates would be affected materially.

Collection and Processing of Recyclable Materials

Financial responsibility in terms of funding 3R's remains the responsibility of the Region. That is, while the area municipalities undertake all Blue Box collections, Durham Region reimburses each via its Waste Management Reserve. To this end, payments to the area municipalities in 1992 approached \$1.7 million. In terms of processing, the Region also assumes full financial responsibility. A tipping fee of \$110.00 per tonne was charged in 1992 to each municipality for recyclable materials delivered to the Durham Recycling Centre. The tipping fee, however, does not necessarily cover the total costs of collecting and processing recyclable materials. Operating shortfalls are financed through the Waste Management Reserve and tipping fees charged to the municipalities, and in 1992 this

contribution totalled \$5,147,800. Due to this sizable amount, Durham Region is now considering establishing a fully self-sufficient recycling tipping fee that would finance all diversion costs. If adopted this tipping fee would approach \$250.00 per tonne.

The transfer stations located in Oshawa, Cartwright and Scugog also play an important role as recycling stations. Residents drop off recyclable materials at the transfer stations where they are sorted and transported to the Durham Recycling Centre.

Financing Waste Diversion Facilities/Programs

The operating expenditures for the existing 3R's facilities/programs include expenses for the following: overhead, facilities management, recycling materials facility, recycling contract operations, Igloo program, recycling vehicles, HHW programs, debt charges and administration. In 1992 total expenditures were \$6,190,420 with the recycling collection representing approximately 29% or 1,767,600 and processing operations representing approximately \$3,954,200 or 64% of the total cost. Overhead represented the remaining 7% of the total cost or \$468,620.

Also in 1992, revenues totalled \$1,139,100. This included \$596,000 in MOEE funding and \$543,100 in material sales.

On the basis of the above costs and revenues, the net cost to provide 3R's facilities and programs in 1992 for Durham Region approached \$5,051,320.

Collection, Disposal and Financing of Landfill Waste

The Region of Durham principally makes use of Metro's Brock landfill located in Pickering (within Durham), while a smaller site is still maintained in Brock Township. The Brock site accepts waste only from Brock Township, and is scheduled to close in approximately six years.

The individual area municipalities are responsible for the physical collection and disposal of landfill waste. The Region is charged a tipping fee (\$152.25 per tonne) at the Metro owned landfill site, and they receive an offsetting rebate (\$83.86 per tonne) from Metro for residential (normal municipal) waste. Durham Region itself recaptures its net disposal costs through a tipping fee charged to the area municipalities. In 1992 this tipping fee was \$52.00 per tonne and Durham expects to increase this to \$59.00 per tonne in 1993.

3.3.2 Metropolitan Toronto

Metropolitan Toronto has implemented the following programs/facilities to divert waste from landfill:

- * weekly Blue Box recycling program;
- * Igloo program that services both rural and high traffic urban public areas;
- * 10 household hazardous waste (HHW) depots and programs and two toxic taxis operated by Metro;
- * residential backyard composting program;
- * residential leaf and yard waste sites (6) and collection and composting programs;
- * waste reduction education program including display and promotional materials;
- * transfer stations that have bins specifically for cardboard, scrap metals, and recyclables;
- * 3 composting facilities and recycling depots in Scarborough, North York and Etobicoke operated by the local municipalities.
- * donation centres and stores for donated clothing and small items;
- * reuse activities and centres;
- * 3 material recycling facilities, 2 of which are located in Toronto and the third is located in Downsview;
- * curbside collection of white goods in East York, Etobicoke and York.

In 1992, 1,078,295 tonnes of residential waste was generated. Of this, 209,682 tonnes, was diverted from landfill and 868,613 tonnes were disposed equating to a diversion rate of approximately 19%. While it is expected that disposal volumes may increase in 1993 because Metro is considering reducing its disposal tipping fee, similar diversion volume has been forecast for 1993. This is primarily due to the fact that Metro will be phasing out its program of reimbursing the local municipalities' Blue Box collection costs.

Collection and Processing of Recyclable Materials

For the last five years, the financial responsibility for the transfer and collection of diversion material remained with Metro. Further, the processing of recyclable material is directly a Metro responsibility. In the past few years, the local municipalities undertook the collection of Blue Box material and the Cities of North York, Scarborough and Etobicoke operated their own composting and transfer facilities. Moreover, Metro compensated the local municipalities for their collection costs. Metro similarly offset the three municipalities for the costs of the composting centres through a diversion credit system (at \$26.50 per tonne for leaves and \$35.00 per tonne for yard waste). That is, the municipalities were paid according to the volumes processed. (During this same time, the City of Toronto did not take part in the direct Blue Box collection compensation program, but rather operated

on a diversion credit system.) The funds for the diversion credits and Blue Box collection were drawn from the private sector tipping fees at the Keele Valley and Brock Road landfill sites, via Metro's Waste Management Reserve.

Financing Waste Diversion Facilities/Programs

The operating expenditures for the existing 3R's facilities/programs include expenses for the following: Blue Box collection, recycling materials facilities, recycling operations, Igloo program, recycling vehicles, HHW programs, debt charges and administration. In 1992 total expenditures were \$50,687,042 million with the recycling collection operations representing \$31,781,492 million or 63% and process operations representing approximately \$16,909,200 million, or 33% of the total cost. In the same year, administrative and overhead costs approached \$1,996,350 million or 4% of total cost.

Also in 1992, revenues totalled \$6,452,300, million. This included \$4,232,500 million in MOEE funding and \$2,219,800 million in material sales. On the basis of the above costs and revenues, the net cost to provide 3R's facilities and programs in 1992 for Metro Toronto approached \$44,234,742.

Collection, Disposal and Financing of Landfill Waste

Landfill waste management facilities and programs include: Keele Valley landfill site and the Brock West Landfill site located in Pickering within Durham. Approximately 70% of Metro's waste is disposed at the Keele Valley landfill site, and the remainder is disposed at the Brock west landfill site.

At the present time, waste collection is an area municipality responsibility. The 1992 tipping fee for Metro landfills was \$152.00 per tonne. If loads contained any recyclables, a higher rate of \$300.00/tonne was charged. Tipping fees for 1993 have now been reduced to \$90.00 per tonne and this became effective May 1, 1993.

3.3.3 The Regional Municipality of York

The Region of York is the only regional government within the GTA which does not co-ordinate the recycling programs of its member municipalities. Each municipality is solely responsible for the implementation and operation of its own curbside recycling program. For ease of presentation we have presented the diversion programs/activities that are taking place within York Region below.

- * residential Blue Box program;
- * special collection or depot services for goods that are particular to season or size including leaves, Christmas trees, brush and white goods;

- * household hazardous waste program including mobile depots and special collection days;
- * composting facility and provision of residential backyard composting bins;
- * two material recycling facilities scheduled to close and a Regional facility will open;
- * residential leaf and yard waste collection and composting programs;
- * reuse activities run by social organizations such as Goodwill;
- * promotional/educational programs;

In 1992, 198,604 tonnes of residential waste was generated. Of this 56,454 tonnes was diverted from landfill and 142,150 tonnes was landfilled, equating to a diversion rate of approximately 38%. A modest decline from the 1992 volume of waste disposal has been forecast for 1993. However, it should be noted that the volume of waste for disposal has been declining at a steady rate since 1991 primarily as a result of IC&I (Industrial, Commercial and Institutional) waste being transported by private haulers out of the Region to alternate lower cost disposal sites. The budgeted volume of recyclable materials for 1993 is anticipated to be similar to 1992 levels tonnes. This does indicate the need to ultimately adopt alternative methods of waste reduction to realize the provincial mandate of 50% waste diversion by the year 2000. The Region has indicated that a pilot demonstration program designed to handle both recyclables and organic kitchen waste is scheduled to commence in September, 1993.

Collection and Processing of Recyclable Materials

Financial responsibility in terms of funding 3R's is entangled, and slightly different in each of the nine area municipalities due to the fact that each municipality is responsible for its own programming and therefore each offers slightly different 3R's programs and facilities. However, for the most part, in York, the area municipalities assume financial responsibility for collection which is funded through the municipal levy.

In terms of processing, the area municipalities also assume financial responsibility. The costs for processing are based on a cost sharing approach. Each municipality is assessed the gross cost of processing less the revenues received from sale of materials. The costs are allocated to each municipality based on population not actual tonnage. This net cost is financed through municipal taxes. It should be noted that the Region of York assumes financial responsibility for the household hazardous waste and the organic yard waste programs. A tipping fee is charged for both programs however, it does not cover the operating costs of the programs, as a result the shortfall is funded by the Regional Waste Management Reserve Fund.

The curbside collection of Blue Boxes in all of the area municipalities within York is contracted out to private firms, although the contractors use the area municipalities vehicles. The individual contracts allow for collection of recyclables at single and multi-residential units. Over 159,000 rural and urban households have been issued a Blue Box. In 1992, approximately 25,433 tonnes of recyclable material was collected through

the Blue Box program and the depots. The collection of these materials is currently the responsibility of the nine area municipalities. Area municipalities also offer a special collection or depot service for goods that are particular to season or size.

York's Blue Box recycling system includes the operation of two municipally owned materials recycling facilities one located in Markham and the other in Richmond Hill. The facility in Markham services Aurora, King, Vaughan and Markham. An estimated 15,312 tonnes were recycled at this facility in 1992. The facility in Richmond Hill services East Gwillimbury, Newmarket, Whitchurch-Stouffville and Richmond Hill. An estimated 8,796 tonnes were recycled at this facility in 1992. Georgina's Blue Box recyclables are taken to the contractor's transfer station in Georgina where a processor from out of Region picks it up. An estimated 1,325 tonnes were recycled at this facility.

The Region of York offered a mobile HHW collection program for eleven weeks in 1992 (August 20 to October 31) in order to assist in the reduction of toxic materials going to landfill. Some toxic and hazardous materials (i.e. batteries, oil and paint, tires, propane containers) are recycled, however most of the hazardous and toxic materials collected are ultimately disposed of. York contracts with the private sector for processing and disposal of the materials. Approximately 10,407 vehicles delivered HHW in 1992. Collection is monitored as part of the Metro program therefore collection data is included in the Metro data.

In addition to their residential Blue Box, program York Region has provided an organic yard waste composting facility. Approximately 16,300 tonnes of yard waste was received in 1992 from residential and IC&I sources. In 1992, the Region charged the area municipalities and industrial, commercial and institutional establishments that used the facility a tipping fee of \$35.00 per tonne plus GST. Although residents that delivered their own yard waste to the facility were not charged a tipping fee. Any shortfalls in operations were financed through the Regional Waste Management Reserve Fund. Based on research completed by RIS, there are two privately owned facilities in York that are presently composting or producing animal feed from waste in the GTA.

Residential backyard composting is actively promoted in York. It is the responsibility of the lower tier municipalities, although the Region has helped with some promotional efforts. By the end of 1992, 23,500 composting units had been distributed.

All area municipalities provide some curbside collection to residents for white goods. Only King Township reported operating a drop off service at its landfill.

Financing of Waste Diversion Facilities/Programs

The operating expenditures for the existing 3R's facilities/programs include expenses for the following: materials recycling facility, organic yard waste and the household hazardous waste programs, debt charges and administration. In 1992, total expenditures by the Region and the area municipalities approached \$10,848,341 with the collection

representing approximately \$7,557,315 or 69% of the total cost. Processing costs approached \$2,139,336 or 20% of total costs, with administration and overhead costs representing \$1,151,690 or 11% of the total. Further in 1992, operating revenues totalled \$3,077,640. Net cost of the diversion activities in York Region were \$7,770,701.

It is expected that the financial profile in York Region will change considerably in 1993. The major change will take place once the Regional recycling centre opens (scheduled for April 1, 1993) and the processing centres in Richmond Hill and Markham close.

Collection, and Disposal Financing of Landfill Waste

Landfill waste management facilities and programs include: Keele Valley landfill site that Metro Toronto owns and operates; Georgina's landfill site; and two small landfills in King Township.

The majority of York Region's solid waste is disposed in Metro's Keele Valley landfill. The disposal needs of some of the smaller communities in the northern part of the Region are served by landfills in Georgina and King Townships.

The individual area municipalities are responsible for the physical collection and disposal of landfill waste. The waste goes primarily to Keele Valley Landfill site. The area municipalities are charged a tipping fee of \$152.00 per tonne by Metro, however they receive a rebate based on the formula of 1.3 tonnes per household. In 1992, the rebate equated to \$83.86 per tonne. The Metro tipping fees decreased to \$90.00 per tonne as at May 1, 1993.

The collection costs are passed on through the area municipal tax bill, while the disposal costs are passed through on the Regional levy. The tipping fee is based on actual tonnages while the rebate is based on theoretical tonnages and population.

3.3.4 The Regional Municipality of Peel

The Region of Peel has implemented the following programs/facilities to divert waste from landfill:

- * residential Blue Box program;
- * pilot demonstration program in Caledon for commercial Blue Boxes;
- * privately owned and operated MRF located in Mississauga for Brampton and Mississauga materials;
- * privately owned and operated MRF/transfer stations (Bolton & Caledon);
- * household hazardous waste program operated in Brampton at the Britannia landfill site and Bolton Community Centre;

- * salvaging centre at the Caledon landfill site;
- * recycling drop off area at the Britannia Sanitary Landfill site;
- * residential backyard composting program and composting area at Britannia and Caledon landfill site;
- * waste reduction education program including display and promotional materials;
- * residential leaf and yard waste collection program;
- * white goods pick up in Brampton and Mississauga and drop off in Caledon;
- * 2 reusable goods exchanges operated by the Region (Albion and Brampton); in Caledon;
- * compost demonstration site for pilot wet/dry projects.

In 1992, 314,878 tonnes of residential volume of waste was generated. Of this 60,559 tonnes was diverted from landfill and 254,319 tonnes, was disposed equating to a diversion rate of approximately 19% for residential waste. A modest decline from the 1992 volume of waste disposal has been forecast for 1993, as a result of the continuation of export of waste to alternate landfill sites and the start-up of the Peel Resource Recovery facility in February, 1992. It should be noted that the volume of waste for disposal has been declining at a steady rate since 1991 primarily as a result of IC&I (Industrial, Commercial and Institutional) waste being transported by private haulers out of the Region to alternate lower cost disposal sites. The current diversion rate indicates the need to ultimately adopt alternative methods of waste reduction to realize the provincial mandate of 50% waste diversion by the year 2000. The Region has indicated a need for a major waste diversion facility to help realize the provincial targets. Officials of the Region of Peel have expressed interest in the central composting facility which is currently under review in the Region of Halton.

Collection and Processing of Recyclable Materials

Since January, 1991 financial responsibility in terms of funding 3R's has been a Regional Responsibility. The Region assumes financial responsibility for collection and processing which is funded through the reserve which accumulated from the tipping fee charged for landfill waste (since 1978). The Region funds the net collection and processing costs, that is the cost after any revenues received from the sale of recyclable materials and grants.

The administration of the 3R's programs in Peel Region is handled by the three area municipalities. The individual municipalities arrange the physical collection and processing of recyclable materials. All three area municipalities are responsible for and actively participate in the residential Blue Box program although the type of material accepted varies. The residential Blue Box program is a well established municipal collection program serving over 240,228 households, including 64,439 apartment buildings and 56,862 multiple-family dwellings. The area municipalities have also expanded their residential program to include "special" residential wastes. Materials collected from each municipal special residential collection program include leaves, Christmas trees, brush and

phone books. It is anticipated that similar tonnes of recyclable material collected from the area municipal programs would be diverted from landfill in 1993.

In addition to the residential Blue Box program, Caledon implemented a town wide user pay recycling system for its industrial and commercial sectors in late 1991. With the exception of Bolton, collection of recyclables is incorporated into Caledon's regular residential collection system.

In addition to the residential Blue Box program, a recyclable materials drop-off area at the Britannia Sanitary Landfill site is available for use by residents and small businesses who wish to deposit materials such as brush, tires, drywall, clean fill, concrete, asphalt, and cardboard.

The cities of Brampton and Mississauga offer pick up of large household appliances for recycling on regular garbage days. Appliances that are still in usable condition may be taken to any one of the three recycling depots in the Region.

The recyclable materials collected curbside in Mississauga and Brampton are delivered to a private MRF in Mississauga. The materials collected curbside in Caledon are taken to a transfer station within the Region, where the materials are inventoried and sold to material brokers directly.

The Region provides a combination of depots (Mississauga, Brampton, Albion and Caledon) and HHW days for the collection of liquid hazardous wastes, used oil, car batteries, and propane cylinders. It is anticipated that approximately 408,500 litres of HHW would be diverted from landfill in 1993. This does not include an estimated 11,800 car batteries and 3,450 propane units. The depots also accept recyclable materials such as Blue Box materials, metal, tires, wood, cardboard and newspaper.

All three municipalities have their own leaf and yard waste composting programs. Until 1992 Brampton owned and operated their own 5 acre site. The operation is now contracted out. Mississauga collects their leaf and yard waste which is delivered to the Region's compost facility at the Britannia landfill site. Some of the yard waste (20%) is handled at the City's centralized demonstration facility. Leaf and yard waste generated by residents of Caledon is collected and composted at the Caledon landfill site.

In 1989, the Region began a reusable goods exchange program at the Caledon and Albion Sanitary Landfill Sites. There are also new reusable goods exchanges located at the recycling depots in Brampton, Caledon and Albion.

Mississauga offers curbside pick up of white-goods. Caledon provides a drop off, while Brampton has both a drop off and curbside pick up.

The Region of Peel has been actively providing backyard composters since 1985. In the period 1990 to 1992 the Region had provided 50,335 backyard composting bins to Peel

residents.

Financing Waste Diversion Facilities/Programs

The operating expenditures for the existing 3R's facilities/programs include expenses for the following: recycling materials facility, recycling contract operations for collection and processing of Blue Box program; recycling vehicles, HHW programs, debt charges and administration. The total expenditures in 1992 were \$12,622,910, with the recycling collection representing approximately \$6,354,977 or 50% of the total cost, while processing represented 21% of the cost at \$2,677,100. The remaining \$3,590,833 was as a result of overhead and administration costs and these represent 29% of the total. The revenues totalled \$1,955,000 in 1992, and as a result net diversion cost approached \$10,667,910.

Collection, Disposal and Financing of Landfill Waste

Landfill waste management facilities and programs include: Britannia landfill site with small quantities going to the Caledon and Albion landfill sites. Peel Region's waste is disposed primarily in the Britannia landfill site, with small quantities going to the Caledon and Albion landfill sites.

The individual area municipalities are responsible for the physical collection and disposal of landfill waste. The Region's tipping fee is \$150.00, however in April 1993, Peel Regional Council voted to reduce its landfill tipping fee to \$80.00/tonne for loads of mixed waste.

3.3.5 REGIONAL MUNICIPALITY OF HALTON

The Region of Halton has implemented the following programs/facilities to divert waste from landfill:

- * bi-weekly Blue Box recycling program;
- * "Shared Responsibility Demonstration Project" whereby the Region is responsible exclusively for the collection of recyclables and the Province in conjunction with the industrial/commercial sector are responsible for the provision of the material recycling facility (MRF);
- * Igloo program that services both rural and high traffic urban public areas;
- * household hazardous waste (HHW) programs in Burlington and Milton;
- * pilot HHW collection program that includes the distribution of 500 household hazardous waste containers to area residents;
- * residential backyard composting program;
- * waste reduction education program including display and promotional materials;
- * Regional transfer stations that have bins specifically for cardboard, scrap

- metals, and recyclables;
- * 4 waste container stations designed to accept residential and some IC&I recyclable materials;
- * recycling depots in Halton Hills for materials not accepted by the Blue Box;
- * reuse centre;
- * residential leaf and yard waste programs;

The Region's 1992 volume of waste for disposal has been estimated at 105,400 tonnes while the volume of recyclable materials diverted from landfill was estimated to be 27,000 tonnes, equating to a diversion rate of approximately 20%. A modest decline from the 1992 volume of waste disposal has been forecast for 1993, as a result of the bans placed on the disposal of grass clippings which have been issued by Burlington and Oakville.

The 1993 volume of waste for disposal has been forecasted downwards to approximately 93,700 tonnes. Officials at the Region of Halton indicated that the volume of waste for disposal has declined at a steady rate since 1991, primarily as a result of IC&I (Industrial, Commercial and Institutional) waste being transported by private haulers out of the Region to alternate lower cost disposal sites. The budgeted volume of recyclable materials for 1993 is 28,000 tonnes. This equates to a diversion rate of approximately 30%. It should be noted that the diversion rate is projected to increase in 1993 however, it is not due to a major increase in diversion volumes but due to a decrease in landfill volumes. Therefore, this indicates the need to ultimately adopt alternative methods of waste reduction to realize the provincial mandate of 50% waste diversion by the year 2000. The Region has indicated that a major waste diversion facility in the form of a central composting facility is under review.

Collection and Processing of Recyclable Materials

Financial responsibility in terms of funding 3R's is entangled, and slightly different in each of the four area municipalities due to the fact that each municipality offers slightly different 3R's programs and facilities. However, for the most part, in Halton, the Region assumes financial responsibility for collection which is funded through the Regional levy. In terms of processing, the Region also assumes financial responsibility. A tipping fee of \$100.00 per tonne is charged to each municipality for recyclable materials delivered to the MRF. The tipping fee charged does not necessarily cover the total costs of administering and collecting recyclable materials. The tipping fee charged to each municipality is financed through municipal taxes.

Commencing February 1, 1993 the curbside collection of Blue Boxes in Halton Region was tendered out to a private hauler. The new contract initiated a bi-weekly collection cycle as well as expanded the range of materials collected. Items such as aluminum foil, high density plastic and boxboard are now collected.

In addition, the arrangement required the contractor to assume the maintenance of the existing recycling truck fleet thereby reducing overall fleet maintenance costs. The

contract period is five years and includes the area municipalities of Milton, Oakville, and Burlington with an option to include Halton Hills. (There was an option in the tender to not include Halton Hills based on its remote location, however, Halton Hills obtained a collection price that they could not meet themselves so they went with the same contractor as the Region. Halton Hills funds their own collection costs through the local levy.)

The new agreement allows for collection of recyclable materials at single and multi residential units and apartment buildings but no longer allows for collection at institutional facilities such as non-profit organizations, municipal offices, and local hospitals.

The area municipalities have also expanded their residential program to include "special" wastes. Special materials collected include leaves, Christmas trees, brush and phone books.

Coinciding with the new residential Blue Box collection contract is the introduction of the previously mentioned "Shared Responsibility Demonstration Project", whereby the Region is financially responsible for the collection of recyclables while the Province in conjunction with the commercial/industrial sector (Halton Recycled Resources) is responsible for provision of the materials recycling facility (MRF). The Province has provided a grant (\$1.4 million) to the contractor, via the Region, for the costs associated with the processing of recyclable materials. The new facilities at Halton Recycled Resource's MRF have essentially allowed operations at the Region owned MRF in Oakville to be terminated.

One of the projects many objectives is to increase both the volume and range of materials collected and processed. Halton receives from Halton Recycled Resources \$20.00/tonne in revenues for all recyclables delivered to the facility. Halton Region has estimated that approximately \$500,000 in revenues will be generated from the collection of recyclables in 1993. This would in part offset the loss of the Provincial grants to the area municipalities from the Ministry of the Environment and Energy (MOEE) for the collection of recyclables, which in 1992 amounted to approximately \$1.2 million.

According to officials at Halton Region and MOEE this pilot demonstration program will run for a one year period with an option to renew for a second year.

Halton Region also provides container facilities in Burlington, Halton Hills, Milton and Oakville which accept small loads of residential waste and recyclable materials. However, at the time of writing recommended program changes included a proposal to close two of the container stations (Burlington and Halton Hills). The 1993 budget projected that 4,350 tonnes of recyclable materials would be diverted at these facilities.

With respect to the Household Hazardous Waste Program, consideration is being given to expansion of the program to once weekly, compared to the current once monthly depot openings. In addition, the Region is conducting a pilot HHW collection program whereby 500 household hazardous waste containers will be distributed to residents. The objective of this collection procedure is to reduce the costs of collection. The capital cost is being

financed through the 1992 budget and the estimated cost is \$12,000.

At present, Halton has a contracted Igloo container collection program whereby the containers are placed at strategic locations for the collection of recyclables. Collection of approximately 900 tonnes of recyclables, from 12 drop off depots, is anticipated for 1993.

Financing Waste Diversion Facilities/Programs

The operating expenditures for the existing 3R's facilities/programs include expenses for the following: recycling materials facility, recycling contract operations, Igloo program, recycling vehicles, contract collection, HHW programs, debt charges and administration. The total expenditures approached \$4.5 million in 1992 with the recycling processing operations representing approximately \$1.1 million or 24% of the total cost. Collection costs in the same year totalled \$2.0 million or 45% of the total, with administration and overhead costs approximating \$1.4 million or 32% of the total. In 1992, grant revenues totalled \$2.2 million this includes \$1,400,000 related to the Shared Recycling Demonstration Project whereby the Province has provided a grant to the contractor via the Region, for the costs associated with the processing of recyclable materials. In addition, revenues of \$780,000 and \$20,000 are expected from the collection of recyclable materials delivered to the new MRF operation and for the HHW program respectively.

On the basis of the above costs and revenues, the net cost to provide 3R's facilities and programs in 1992 for Halton Region approached \$2.2 million after grants and other revenues.

Collection and Disposal of Landfill Waste

Landfill waste management facilities and programs include:

- * \$53.0 million new waste management site which commenced operations in late 1992;
- * closed landfill sites which still require maintenance and monitoring;
- * container stations for receipt of small amounts of residential and HHW waste.

The opening of the landfill site terminated the export of landfill waste to disposal sites outside Halton Region.

At the present time, waste collection is an area municipal responsibility while waste disposal is a Regional (levy) responsibility. The 1993 forecast for municipal waste is 93,700 tonnes of waste, a modest decline from 1992 due to the ban on the disposal of grass clippings in Oakville and Burlington. The IC&I waste stream is budgeted to be 10,000 tonnes a drop of nearly 80% over 1991 levels. This is due to alternate lower cost disposal sites located primarily south of the border.

The tipping fee for disposal has remained constant for 1993 at \$150 per tonne despite declining tonnages.

3.4 PROVINCIAL FUNDING

The Ministry of the Environment and Energy provides funding and technical assistance for projects which help achieve the Provincial waste diversion targets. There are a number of different grants/programs currently in place which are described below.

3.4.1 Municipal Recycling Support Grants

These grants help the municipalities with the planning, implementation, operation and expansion of recycling projects. They help to reduce waste disposal requirements and provide other environmental benefits to Ontario. More specifically the municipal recycling support grants cover:

- * Capital costs: support for the costs of facilities and equipment needed by the project.
- * Operating costs: support for the cost of operating municipal recycling programs. Grant amounts are based on the lesser of a percentage of total costs or the net operational cost (costs less revenues). New municipalities can receive up to five years of funding. In year one, they are eligible to receive up to 50 percent funding; 40 percent in year two and 33 percent in each of the three remaining years. Municipalities that were on the program as of April 1, 1991, and those that have expended the five year eligibility period on or prior to that date, are eligible to receive up to three additional years of funding at 33 percent.
- * Feasibility studies: municipalities can receive grants up to 50 percent of the costs of feasibility studies to implement a recycling program
- * Promotion and advertising: grants up to 50 percent of promotional and advertising costs over five years.
- * Demonstration projects: grants up to 100 percent for the costs of demonstration projects designed to develop innovative recycling methods or technologies.
- * Education projects: grants up to \$15,000 to support unique educational projects designed to raise the awareness and understanding of the 3R's.

The Table 3-3 summarizes the Municipal Recycling Support Grant Expenditures for the fiscal years 1989 to 1993.

Table 3-3

Municipal Recycling Support Grant In the GTA			
Year	Capital (\$)	Operating (\$)	Total (\$)
1989	1,256,321	1,484,695	2,741,016
1990	3,060,397	3,741,056	6,801,453
1991	3,597,261	9,245,832	12,843,093
1992	1,112,187	6,314,857	7,427,044
1993	34,539	525,918	560,457
Total	9,060,705	21,312,358	30,373,063

Source: MOEE, Waste Reduction Office

Table 3-4

Municipal Reduction/Reuse Grants In the GTA				Composting Units
Year	Capital (\$)	Operating (\$)	Total (\$)	
1989	377,607	966	378,573	16,180
1990	611,678	77,123	688,801	24,720
1991	1,695,492	76,828	1,772,320	85,145
1992	2,722,018	238,861	2,960,879	94,346
1993	478,694	9,421	488,115	15,482
Total	5,885,489	403,199	6,288,688	235,873

Source: MOEE, Waste Reduction Office

3.4.2 Municipal Reduction/Reuse Grants

These grants are aimed at reducing the amount of waste going into the municipal waste stream. More specifically, these include projects to encourage less packaging, home composting projects and the development of new product approaches. The grants cover:

- * Capital costs: grants of up to 66 percent of the purchase cost of home composters. Support for other types of reduction projects are considered on

a case-by-case basis.

- * Developmental costs: development of creative materials or approaches may be funded up to 100 percent to a limit of \$25,000.
- * Promotional costs: grants of up to 50 percent are available for municipal solid waste audits and public education.

The Table 3-4 summarizes the Municipal Reduction/Reuse Program Expenditures for the fiscal years 1989 to 1993.

3.4.3 3R's Funding Program

These grants are for projects that recover materials from the mixed waste stream. Assistance is available to establish facilities to recover or process paper, compost, aluminum, steel, glass, plastic or other materials. Grants are available for:

- * Capital costs: grants up to one third of the costs of facilities;
- * Research/development costs: grants up to 100 percent of the projects cost of demonstrating or evaluating the proposal

The following table summarizes the 3R's Funding Program Expenditures for the fiscal years 1990 to 1992.

Table 3-5

3R's Funding Program
in the GTA

Year	Capital Expenditure
1990	281,819
1991	520,561
1992	2,699,368
Total	3,501,748

Source: MOEE, Waste Reduction Office

3.4.4 Household Hazardous Waste Collection Program

This program helps to divert hazardous waste away from municipal landfills and sewage treatment systems. Grants are available for special waste days/weekends or events and permanent depots. The amount of funding is limited to 50 percent of the incurred costs up to \$5,000 per year. Funding can increase by an additional \$10,000 for a total maximum grant of \$15,000, or a part of \$10,000 equivalent of the collected volume of waste diverted from disposal to reuse, recycling or refining or 50 percent of the total project cost, whichever is less.

3.4.5 Financial Assistance Program

The program assists with the implementation of new or expanded existing waste management facilities such as landfill sites, transfer stations and processing facilities. Eligible activities range from capital costs associated with construction, equipment, land and design, and includes Environmental Assessment hearing costs if associated with a master plan. Private waste management facilities are not funded except where a municipality can demonstrate that it does not have the resources to establish and operate a waste management facility. Applicants are placed in groups based on population in order to ensure fair and equitable distribution of funds.

3.5 PRIVATE FUNDING

OMMRI: Corporations in Support of Recycling is founded on a forerunner organization, Ontario Multi-Material Recycling Incorporated, whose membership comprises of the soft drink industry, and its container and container material suppliers. This organization worked closely with municipalities and the Ministry of the Environment and Energy to increase the number of "Blue Box" households to two million from 150,000, the number of boxes in use in 1986. It also helped fund recycling programs for 144,000 apartment units and 113,000 rural residences. Although their original four year, \$20 million mandate has been met, the soft drink industry continues to support multi-material recycling through OMMRI: Corporations in Support of Recycling.

At the beginning of 1990, six industry sectors responded to the Government of Ontario's challenge to broaden private sector involvement in waste reduction activities. Signing a Memorandum of Understanding with the government, they established a cooperative arrangement to help develop a province-wide waste reduction system based on the Blue Box recycling program. Industry agreed to provide \$45 million over five years, 1990 to 1994, to help fund the system. It created OMMRI: Corporations in Support of Recycling to distribute the funds.

OMMRI currently contributes one-third of the capital costs of Blue Boxes, recycling trucks and processing equipment to municipal recycling organizations as well as assistance for costs associated with promoting, launching and expanding municipal recycling programs.

As of January 8, 1992 OMMRI has put all requests for funding in the GTA on hold. According to representatives of OMMRI they will continue to place all funding requests (except for the Crinc operation in Metro that commenced operations in May, 1992) on hold until the Government honours the Memorandum of Understanding that calls for "level playing field legislation" whereby all industry would be required to become involved in the funding of recycling activities. It should be noted that OMMRI is paying outstanding commitments in 1993.

Future initiatives of OMMRI's include a cooperative program with the Ontario Soft Drink Association's (OSDA) which developed a Top-Up formula to ensure that the cost of recycling soft drink containers in the Blue Box program is not born by the municipal tax payer. In 1992, the operating subsidy was determined to be \$50.00 per tonne of soft drink material recycled. The program has processed approximately \$380,000 in operating grants so far.

3.6 FUTURE WASTE DIVERSION COMMITMENTS

This section of the report presents the analysis of the committed capital for future diversion activities. The analysis included a review of each Region's and Area Municipalities' 1993 current and five year capital budgets and the most recent development charges study where available. In addition, the analysis included telephone interviews with various Regional staff to augment the budget information provided.

The analysis includes new capital or program items that would potentially change existing financing requirements. More specifically, the activities presented only include expenditures that could potentially increase the amount of tonnage diverted, therefore inflation increases to existing budget items have not been included. For example, in Halton Region a new Household Hazardous Waste Depot is planned and would potentially increase diversion, therefore the associated costs have been included in the analysis.

Table 3-6 presents a summary of the 1993 capital and program commitments as well as capital and program commitments for the years 1994 to 1997, for the entire GTA. Table 3-6 also includes other items that we have been advised of, but were not included in either the capital budget or development charges studies.

Table 3-6

**Waste Diversion Capital Commitments
in the GTA**

Region	1993 Commitments	1994 - 1997 Commitments	Not Identified in Budgets	Total Program
Durham	1,475,500	2,400,000		3,875,500
Metro	9,105,000	60,824,000	70,406,000	140,335,000
York	2,785,100			2,785,100
Peel	25,700,000	64,600,000		90,300,000
Halton	791,400		26,500,000	27,291,400
Total GTA	39,857,000	127,824,000	96,906,000	264,587,000

Source: 1993 Municipal Capital Budgets

3.6.1 Durham Region

The review of Durham Region's 1991 Development Charges Study and the 1993 Capital and Operating Budgets and five year forecast for Waste Diversion indicated the following:

\$2,788,400 has been allocated in the 1993 capital budget for the design and construction of an expansion to the Regional Recycling Centre. Approximately, \$388,400 has been allocated in 1993 and the remaining \$2,400,00 in the years 1994 to 1997.

\$702,200 has been allocated in the 1993 operating budget as a result of changes to programs related to the Recycling Centre and Recycling programs, including extended hours of operation, additional staff, expansion of the Igloo program and deletion of the Toxic Taxi program.

\$384,900 has been allocated in the 1993 operating budget as a result of the introduction of the sale of home composters, the Pickering Compost Study and new community events programs.

Table 3-7 summarizes the committed capital expenditures for waste diversion activities for Durham Region. This table shows that Durham Region and the local municipalities anticipate spending a total of \$3.8 million (\$1.4 million plus \$2.4 million) over the next five years. This total capital cost has been used to evaluate the relative effects of each of the alternative diversion systems.

3.6.2 Metropolitan Toronto

The review of Metro Toronto's 1993 Capital and Operating Budgets and five year forecast for Waste Diversion indicated the following had been committed:

\$69,697,000 (land and facility) has been allocated in the capital budget for a Regional Composting Plant. Approximately \$27,000,000 has been allocated in the years 1994 to 1997 with the remaining costs budgeted post 1997.

\$34,310,000 (land and facility) has been allocated in the capital budget for Recycling Centre #3. Approximately \$9,000,000 has been allocated in the years 1994 to 1997 with the majority of the cost budgeted post 1997.

\$22,420,000 (facility only) has been allocated in the capital budget for Recycling Centre #2. Approximately \$3,600,000 has been allocated in 1993 with the remaining costs in the years 1994 to 1997.

\$4,281,000 has been allocated in the capital budget for a Recycling Depot. Approximately \$1,031,000 has been allocated in 1993 with the majority of the costs budgeted in the years 1994 to 1996.

\$1,158,000 has been allocated in the capital budget for equipment for the MRF. on Commissioner Street. Approximately \$1,058,000 has been allocated in 1993.

\$507,000 has been allocated in the capital budget for a Household Hazardous Waste Depot. Approximately \$330,000 has been allocated in 1993 with the remaining costs budgeted in the years 1994 and 1995.

\$180,000 has been allocated in the capital budget for additional market development, research and product testing associated with the Wet Collection and Processing Program. The total program cost was estimated to be \$2,761,000. It should be noted that the program is winding down.

Table 3-7

CAPITAL COMMITMENTS FOR DURHAM REGION

Commitments	1993 Commitments	1994-1997 Commitments	Other Capital not Identified in Budgets	Total Capital Cost
Major Commitments				
Recycling Centre Expansion	388,400	2,400,000		2,788,400
Subtotal Major Commitments	388,400	2,400,000	0	2,788,400
Minor Commitments				
Recycling Centre Operations	702,200			702,200
Waste Reduction Operations	384,900			384,900
Subtotal Minor Commitments	1,087,100	0	0	1,087,100
Total Major Commitments	388,400	2,400,000	0	2,788,400
Total Minor Commitments	1,087,100	0	0	1,087,100
Total Commitments	1,475,500	2,400,000	0	3,875,500
	=====	=====	=====	=====

Source: 1993 Municipal Capital and Operating Budgets and Development Charges Study
Compiled by Future Urban Research

Table 3-8				
CAPITAL COMMITMENTS FOR METRO REGION				
Commitments	1993 Commitments	1994-1997 Commitments	Post-1997 Commitments	Total Capital Cost
Major Commitments				
Composting Plant				
Facility		22,915,000	42,858,000	
Land		3,924,000		69,697,000
Material Recycling Facility #3				
Facility		8,755,000	25,227,000	
Land		328,000		34,310,000
Recycling Depot	1,031,000	3,250,000		4,281,000
HHW Depots	330,000	177,000		507,000
Material Recycling Facility #2				
Facility	3,627,000	18,793,000		22,420,000
Subtotal Major Commitments	4,988,000	58,142,000	68,085,000	131,215,000
Minor Commitments				
Commissioner Street MRF	1,058,000	100,000		1,158,000
Wet Collection & Processing	180,000			180,000
Recycling Start-Up				
Start-Up	114,000	18,000		
Transfer Trailers	309,000	373,000		
Apartment Start-Up	762,000			1,576,000
Backyard Composters	1,227,000	501,000		1,728,000
Roll-Off Containers for				
Banned Material	124,000	241,000		365,000
Prototype Vehicle	147,000			147,000
Tire Recycling	196,000			196,000
Wood Shredding &				
Tire Recycling		1,449,000	2,321,000	3,770,000
Subtotal Minor Commitments	4,117,000	2,682,000	2,321,000	9,120,000
Total Major Commitments	4,988,000	58,142,000	68,085,000	131,215,000
Total Minor Commitments	4,117,000	2,682,000	2,321,000	9,120,000
Total Commitments	9,105,000	60,824,000	70,406,000	140,335,000
=====				
Source: 1992 Municipal Capital Budgets and Four Year Forecasts				
Compiled by Future Urban Research				

\$1,576,000 has been allocated for the start up of recycling collection with \$1,185,000 being included in the 1993 capital budget. The total cost of the program was approximately \$13,811,000 of which the majority has been allocated prior to 1993.

\$1,728,000 has been allocated in the 1993 capital budget in association with the sale and distribution of Backyard Composters. The total cost of the program was approximately \$8,260,000 of which the majority has been allocated prior to 1993.

\$365,000 has been allocated for Roll Off Containers for Banned Material with \$124,000 being allocated in the 1993 capital budget. Approximately \$241,000 is allocated in 1994.

\$147,000 has been allocated in the 1993 capital budget in association with the prototype vehicles for recyclables. The total cost of the vehicle was approximately \$489,000 of which the majority has been allocated prior to 1993.

\$196,000 has been allocated in the 1993 capital budget in association with tire recycling. The total cost of the program was approximately \$292,000 of which \$96,000 has been allocated prior to 1993.

\$1,449,000 has been allocated in the years 1994 to 1997 for the purchase of equipment and construction of a special wood shredding and tire recycling facility. The total cost of the program is approximately \$3,770,000 of which \$2,321,000 has been allocated post 1997.

Table 3-8 summarizes the committed capital expenditures for waste diversion activities for Metro Region. This table shows that Metro Region and the local municipalities anticipate spending a total of \$69.9 million (\$9,105,000 plus \$60,824,000) over the next five years. The capital budgets, however, indicate that an additional \$70.4 million will continue after 1997. This brings the total committed program to \$140.3 million and, for analysis purposes, this latter total capital cost has been used to evaluate the relative effects of each of the alternative diversion systems.

The second system evaluated is the Committed System which includes all new capital or program items that could potentially change existing financing arrangements. Moreover, for all other Regions examined, this definition just includes 'those programs that have been identified as committed within the municipalities' five year capital budgets. In the case of Metro Toronto, however, construction of the compost facility, the MRF #3 and the tire recycling facility extends beyond 1997. Since these projects are to be initiated within the five year forecast, Metro's intention to undertake these projects is clear. For this reason, therefore, the full cost of the committed program is used for evaluation purposes, rather than just the total of capital costs for the next five years. In the evaluation of alternative

systems, however, caution was exercised when viewing analysis results in case this treatment of projects over-estimates system costs.

3.6.3 York Region

A review of York Region's 1991 Development Charge Policy Report and the 1993 Budget Detail for Environmental Services including Waste Diversion indicated the following:

\$2,224,000 has been allocated in the budget for a Regional Materials Recovery Facility. The existing municipal facilities will terminate operations when the Regional facility commences operations.

\$445,100 has been allocated in the budget as a result of an increase in payments to contractors as a result of an increase in the service level in the Household Hazardous Waste Program.

\$116,000 has been allocated in the budget as a result of an increase in payments to contractors as a result of an increase in the service level in the Organic Yard Waste operations.

Table 3-9 summarizes the committed capital expenditures for waste diversion activities for York Region. This table shows that York Region and the local municipalities anticipate spending a total of \$2,785,100 in 1993. It is important to note that the Region of York does not at the present time prepare a five year capital forecast for Waste Management. Therefore, the above mentioned 1993 total capital cost of \$2,785,100 has been used to evaluate the relative effects of each of the alternative diversion systems.

3.6.4 Peel Region

A review of Peel Region's 1993 Capital and Operating Budgets for Waste Diversion indicated the following:

\$25,800,000 has been allocated to design and construct seven community recycling centres/depots/satellite drop-off facilities: three in Mississauga, two in Brampton and one in Caledon which would accept recyclables, household hazardous waste, reusable items and residential waste. \$5,000,000 has been budgeted in 1993 and \$20,800,000 has been budgeted for the facilities between the years 1994 to 1997. According to officials at the Region, the facilities may or may not proceed. The net annual impact would be approximately \$800,000 including reserve contributions of \$385,000.

Table 3-9

CAPITAL COMMITMENTS FOR YORK REGION

Commitments	1993 Commitments	1994-1997 Commitments	Total Capital Cost
Major Commitments			
Materials Recovery Facility	2,224,000		2,224,000
Subtotal Major Commitments	<u>2,224,000</u>		<u>2,224,000</u>
Minor Commitments			
HHW Program	445,100		445,100
Organic Yard Waste	116,000		116,000
Subtotal Minor Commitments	<u>561,100</u>	<u>0</u>	<u>561,100</u>
Total Major Commitments	2,224,000	0	2,224,000
Total Minor Commitments	561,100	0	561,100
Total Commitments	<u>2,785,100</u>	<u>0</u>	<u>2,785,100</u>
	=====	=====	=====

Source: 1993 Municipal Capital and Operating Budgets and 1991 Development Charge Policy Report
Compiled by Future Urban Research

Table 3-10

CAPITAL COMMITMENTS FOR PEEL REGION

Commitments	1993 Commitments	1994-1997 Commitments	Total Capital Cost
Major Commitments			
Community Recycling Centres	5,000,000	20,800,000	25,800,000
Materials Recovery Facility	10,500,000	14,500,000	25,000,000
Regional Composting Facility	10,000,000	28,500,000	38,500,000
Subtotal Major Commitments	25,500,000	63,800,000	89,300,000
Minor Commitments			
Waste Reduction and Recovery	100,000	400,000	500,000
Mini Recycling Depots	100,000	400,000	500,000
Subtotal Minor Commitments	200,000	800,000	1,000,000
Total Major Commitments	25,500,000	63,800,000	89,300,000
Total Minor Commitments	200,000	800,000	1,000,000
Total Commitments	25,700,000	64,600,000	90,300,000
	=====	=====	=====

Source: 1993 Municipal Capital and Operating Budgets
Compiled by Future Urban Research

\$25,000,000 has been allocated in the budgets for the design and construction of a Material Recovery Facility to process residential recyclable materials from Blue Box collections, Community Recycling Centres and the new mini depots. \$10,500,000 has been budgeted in 1993 while in the years 1994 to 1997, \$14,500,000 has been allocated.

\$38,500,000 has been budgeted to establish a central composting facility either in Peel or in conjunction with Halton Region. \$10,000,000 has been budgeted in 1993 and in the years 1994 to 1997 \$28,500,000 has been allocated. Due to the uncertainty of the configuration of the facility, incremental operating costs have not been included in this analysis.

\$500,00 has been allocated in the budgets, for the design and construction of mini recycling depots to service residents who cannot be serviced by conventional methods (i.e. container stations). \$100,00 has been allocated in 1993 and \$400,000 has been allocated in the years 1994 to 1997.

\$500,000 has been allocated in the budgets to cover unexpected expenses relating to future facilities and planning. \$100,000 has been allocated in 1993 while \$400,000 has been allocated in the years 1994 to 1997.

Table 3-10 summarizes the committed capital expenditures for waste diversion activities for Peel Region. This table shows that Peel Region and the local municipalities anticipate spending a total of \$90,300,000 (\$25,700,000 in 1993 plus \$64,600,000 in the years 1994 to 1997) over the next five years. This total capital cost has been used to evaluate the relative effects of each of the alternative diversion systems.

3.6.5 Halton Region

The review of Halton Region's 1993 Development Charges Study and the 1993 Capital and Operating Budgets and five year forecast for Waste Diversion indicated that the following had been committed:

\$500,000 has been allocated in the 1993 capital budget for the design and construction of a new Household Hazardous Waste Depot on location at the new Regional landfill site.

\$25,000,000 has been allocated for the design and construction of a Regional Composting Facility. At the present time the facility is under review while the Region works out the details of ownership and sizing. It is important to note

that no provision has been made for the facility in the 1993 Capital Budget and five year forecast. However, we have assumed that the Region would proceed with the facility and incur the above mentioned capital cost.

\$255,000 has been allocated in the Development Charges Study for the purchase of recycling vehicles over the period 1993 to 1997, however, the Operating Budget indicated that the vehicles would be sold (for approximately \$255,000) in conjunction with the new tender contract for the collection of recyclables,

\$207,000 has been allocated in the 1993 operating budget as a result of a change in the service level of the Household Hazardous Waste Depot in Burlington. The facility will operate each Saturday of the month as opposed to once per month as in prior years.

\$1,587,700 has been allocated in the operating budget as a result of a change to the Recycling Contract Operations as a result of the "Shared Responsibility Demonstration Project", whereby the Region is financially responsible for the collection of recyclables while the Province in conjunction with the Commercial/industrial sector (Halton Recycled Resources) is responsible for provision of the materials recycling facility. The Province has provided a grant for the costs associated with the processing of the materials. When the grant terminates there would be an additional \$1,500,000 cost to the Region which the analysis has accounted for. The grant is for a one year term with an option to renew in 1994. The new facilities at Halton Recycled Resource's MRF. have essentially allowed operations at the Region owned MRF. in Oakville to be terminated. A reduction of \$145,000 in the 1993 operating budget has been estimated as a result of the closure of the Regional MRF.

\$34,300 has been estimated in the 1993 operating budget as the result of expansion to the Igloo Program. An additional 24 Igloo's are proposed to be added to the program in 1993.

\$107,400 has been estimated in the 1993 operating budget as the result of additional Waste Reduction Education Programs and Display Materials design to increase participation rates.

Table 3-11 summarizes the committed capital expenditures for waste diversion activities for Halton Region. This table shows that Halton Region and the local municipalities anticipate spending a total of \$27,291,400 (\$791,400 in 1993 plus \$26,500,000 in 1994 to 1997) over the next five years. It is important to note that proceeds of \$145,000 and \$255,000 from the sale of the recycling vehicles and from the closure of the recycling materials facility have been taken into consideration in arriving at the total cost. This total capital cost has been used to evaluate the relative effects of each of the alternative diversion systems.

Table 3-11

CAPITAL COMMITMENTS FOR HALTON REGION

Commitments	1993 Commitments	1994-1997 Commitments	Other Capital not Identified in Budgets	Total Capital Cost
Major Commitments				
HHW Depot	500,000			500,000
Regional Composting Facility			25,000,000	25,000,000
Recycling Vehicles			255,000	255,000
Subtotal Major Commitments	500,000	0	25,255,000	25,755,000
Minor Commitments				
HHW Programs (Bur. & Mil)	207,000			207,000
Recycling Contract Operations	87,700		1,500,000	1,587,700
Recycling Mat. Fac. Closure	-145,000			-145,000
Igloo Program Expansion	34,300			34,300
Sale of Rec. Vehicles			-255,000	-255,000
Waste Reduction Administration	107,400			107,400
Subtotal Minor Commitments	291,400	0	1,245,000	1,536,400
Total Major Commitments	500,000	0	25,255,000	25,755,000
Total Minor Commitments	291,400	0	1,245,000	1,536,400
Total Commitments	791,400	0	26,500,000	27,291,400
=====				

Source: 1993 Municipal Capital and Operating Budgets and Development Charges Study
Compiled by Future Urban Research

4.0 MUNICIPAL FINANCE PROFILES

This chapter presents financial profiles for each of the Regions within the GTA. This information is presented as baseline background information and this will be used to test the alternative diversion systems to determine the financial effect of the individual options. By presenting the baseline financial profiles, no intention has been made to judge the alternative diversion systems in terms of the financial capabilities of the individual municipalities in the GTA. Before detailing the individual financial profiles, an overview of selected municipal finance items is presented.

As described in the methodology section of this report, the financial profiles are based on 1990 (MARS) data, that being the most recent complete set of data available. Before finalization of this report this data will be revised to include the most recent possible. This base case information, however, will include the diversion budget information from 1992 presented in the previous chapter.

4.1 OVERVIEW

Each of the GTA Regions have very different financial characteristics. These centre around six specific financial aspects:

- * the size of the commercial and industrial sector within the Region's tax base;
- * the sources of revenue available to finance expenditures;
- * the actual level of service expenditures;
- * the amount of debt carried by the tax payers;
- * the amount of reserves available to fund expenditures.
- * the actual (or average) level of property taxes in the Region;

It will be demonstrated that, while each Region has a different mix and blend of financial characteristics, each Region has specific advantages in one of more of these fiscal categories. This will be demonstrated in the individual financial profiles. Specifically, after reviewing the financial base information the following pattern can be discerned:

GTA 3R ANALYSIS
MUNICIPAL FINANCE COMPARISON

Table 4-1

	Durham	Metro	York	Peel	Halton
Persons Per Household	2.55	2.41	2.75	2.71	2.66
Residential Assessment %	74%	53%	73%	67%	75%
Comm'l/Ind'l Assessment %	26%	47%	27%	33%	25%
Avg Property Taxes - Dollars					
- Local	481	246	314	433	502
- Regional	341	620	519	325	333
- Direct Charges	210	149	208	184	224
Subtotal Municipal Tax	1,032	1,015	1,041	942	1,059
- Schools	961	1,152	1,917	1,192	1,148
Total Tax Per Household	1,993	2,167	2,958	2,134	2,207
Avg Property Taxes - Percent					
- Local	24%	11%	11%	20%	23%
- Regional	17%	29%	18%	15%	15%
- Direct Charges	11%	7%	7%	9%	10%
- Schools	48%	53%	65%	56%	52%
Total Tax Per Household	100%	100%	100%	100%	100%
Revenue Distribution					
- Property Tax	46%	42%	52%	50%	52%
- Grants	23%	24%	18%	16%	17%
- Program Charges	19%	15%	21%	17%	18%
- Fees & Other	12%	19%	9%	17%	13%
Total Revenue	100%	100%	100%	100%	100%
Total Operating Expenditures					
Per Household					
- Regional	2,035	3,478	1,160	1,720	1,572
- Local	1,455	1,637	1,780	1,645	1,430
- Total	3,490	5,115	2,940	3,365	3,002
Percent Waste Diversion	1.1%	1.0%	1.8%	1.4%	0.7%
Total Debt Per Household	260	789	263	481	738
Debt Charges as a % of Expenditures	2.3%	4.3%	2.1%	5.2%	6.7%
Total Reserves Per Household	1,462	1,115	1,919	2,856	1,527

Source: MARS, 1990, Ministry of Municipal Affairs

- * Metropolitan Toronto is able to undertake much more costly service expenditures while maintaining similar tax levels as other Regions due to its large commercial and industrial tax base (at 47 percent of total property assessment -- Table 4-1) to draw on;
- * The Region of Durham relies more on Provincial Grants (at 23 percent of total revenue -- Table 4-1) than the other GTA Regions, except for Metro (at 24%). This may be partly a result of the Province's funding formulae for general welfare assistance. In Durham social service expenditures are proportionately larger (at 37% of gross expenditures) than elsewhere in the GTA.
- * The Region of York has a lower level of operating expenditures per household (at \$2,940 per household -- Table 4-1) for combined Regional and local service operations than the remainder of the GTA Regions.
- * The Region of Halton maintains the lowest level of per household expenditures for local service operations (\$1,430 -- Table 4-1) and the second lowest for Regional operations (\$1,572).
- * The Regions of Durham and York have the lowest levels of debt (at \$260 and \$263 per household, respectively) of all the GTA Regions. This results in a low debt capacity guideline, as provided by the Ministry of Municipal Affairs. (This excludes debt related to the York-Durham Sewage System which is Provincially operated.)

The debt capacity guideline was previously administered by the Ontario Municipal Board and is now within the auspices of the Ministry of Municipal Affairs. (See Bill 165 An Act to Amend Certain Acts Related to Municipalities - Royal Assent June 25, 1992 and Ontario Regulations 710/92 made under the Municipal Act.) It is defined as debt charges (principal and interest) taken as a percentage of total operating expenditures. For the Regions of Durham and York these ratios have been calculated at 2.3 percent in Durham and 2.1 percent in York (Table 4-1).

- * The Region of Peel has the largest level of reserve funds at \$2,856 per household (Table 4-1) as compared to the other GTA Regions. Among other things these funds are used to finance Blue Box collections and processing.

4.1.1 Comparative Tax Levels

Notwithstanding this diversity, a relatively consistent level of municipal taxation, for local and Regional purposes, excluding schools but including user charges such as water rates, is obtained. In 1990, municipal taxation per household in each of the GTA Regions was:

Durham Region	1,032
Metro	1,015
York Region	1,041
Peel Region	942
Halton Region	1,059

The taxation data, as well as the other factors described above, are summarized on Table 4-1. This data will also be presented graphically in this chapter.

4.1.2 GTA Financial Summary

The following section highlights the above mentioned selected municipal finance information for the GTA Regions. This information is reproduced from Table 4-1 and is drawn from Schedule A, which presents detailed financial summaries for each of the GTA Regions as well as for all the individual area municipalities.

Property Assessment

Property assessment ranges as high as \$240 billion, when expressed on a market value basis, for Metro Toronto to the lowest of \$24 billion in Halton Region. When the relative sizes of the residential versus the commercial/industrial sectors are compared, the data suggests that Halton, Durham and York all are similar, with residential sectors representing about 75 percent of the tax base. Metro Toronto and Peel Region, on the other hand, maintain larger commercial/industrial sectors, at 47 and 33 percent, respectively, with the residential sector making up the remaining difference. This is significant from a taxation point of view, as the residential sector pays taxes at a discounted mill rate (15 percent), while the commercial/industrial sector pays business taxes in addition to property taxes.

Revenue Composition

While the Regions of Halton and York rely most heavily on property taxation (52 percent of revenues) as a funding source, Durham Region and Metro Toronto have the least reliance on taxation (46 percent and 42 percent, respectively). In both cases, the Region of Durham and Metro Toronto rely more on Provincial Grants (23 percent and 24 percent of revenues, respectively). These two regions, along with Peel, also rely on user fees, such as water and sewer billing in Durham (12 percent of revenues) and special purpose fees in Metro (19 percent of revenues) and program revenues in Peel (17% of revenues).

Figure 4-1

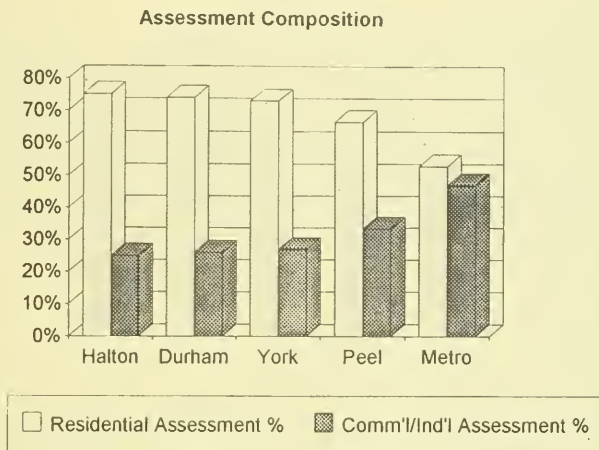
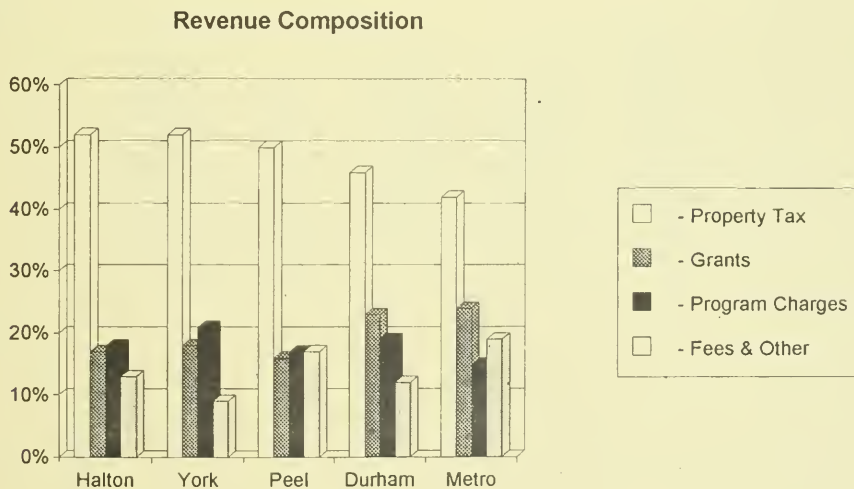


Figure 4-2

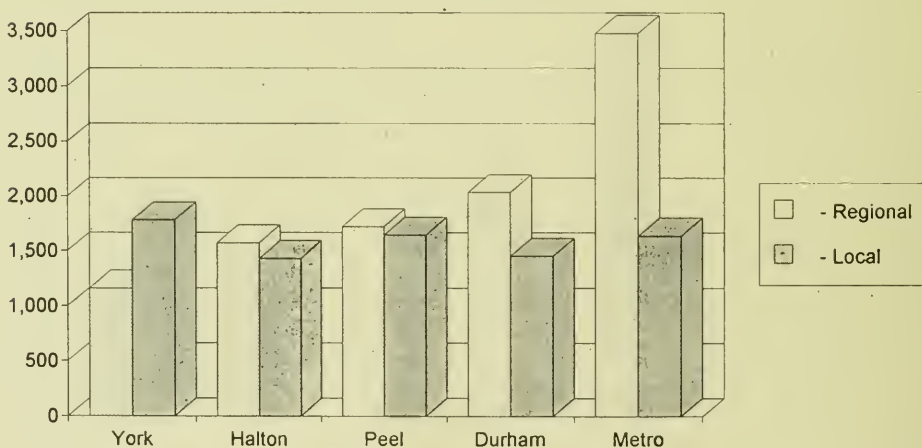


Operating Expenditures

In the GTA, total service expenditures, exceeded \$6.5 billion in 1990. This was composed of: Halton -- \$318 million; York -- \$438 million; Durham -- \$475 million; Peel -- \$754 million; and, Metropolitan Toronto -- \$4.5 billion. When expressed on a per household basis, service expenditures range as high as \$5,115 in Metro for both local and regional purposes to: \$3,490 in Durham Region; \$3,365 in Peel Region; \$3,002 in Halton and \$2,940 in York Region. The relatively high service expenditures in Metro include services that are not provided in the other GTA Regions such as, the TTC, Housing and special event programs.

Figure 4-3

Operating Expenditures Per Household



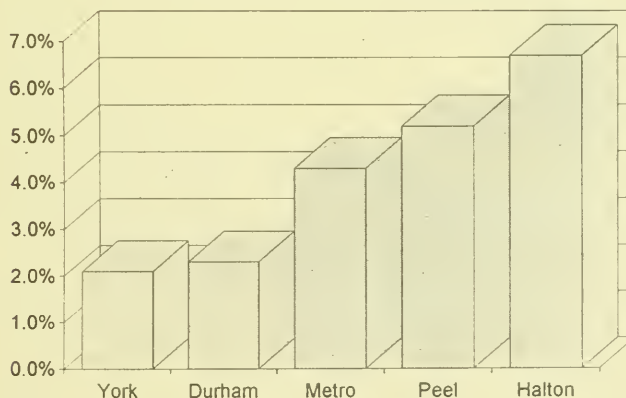
Source: MARS, 1990, Ministry of Municipal Affairs

Debt and Debt Charges

In the GTA, total long term liabilities in 1990 approached \$960 million. This consisted of: Durham \$35 million; York -- \$39 million; Halton -- \$78 million; Peel -- \$108 million; and, Metro -- \$697 million. When expressed on a per household basis, debt per household ranges from \$789 in Metro to \$738 in Halton, \$481 in Peel, \$263 in York and \$260 in Durham. While Halton, Peel and Metro rely more on debenture financing, York and Durham fund more of their capital expenditures directly from the tax levy. As a result of these debt levels, when expressed as a percentage of operating expenditures, debt charges approach 6.7 percent in Halton, 5.2 percent in Peel, 4.3 percent in Metro, 2.3 percent in Durham and 2.1 percent in York.

Figure 4-4

Debt Charges as a Percent of Expenditures



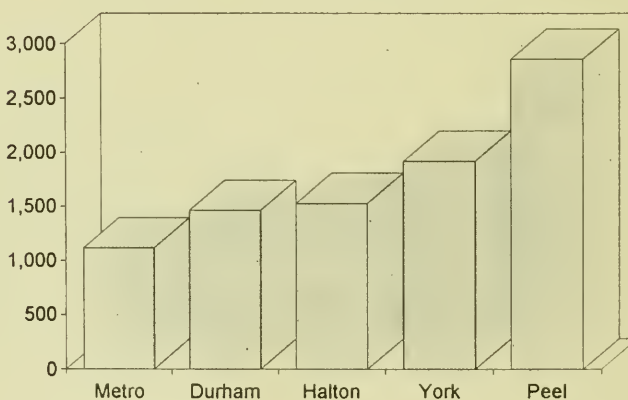
Source: MARS, 1990, Ministry of Municipal Affairs

Reserves and Reserve Funds

Reserves and reserve funds are used for both capital and current operational purposes. In 1990, reserves and reserve funds totalled \$2.2 billion in the GTA. This represented an average of about \$1,800 per household. In each of the Regions reserves totalled \$986 million in Metro, \$640 million in Peel, \$285 million in York, \$199 million in Durham and \$161 million in Halton. Specifically, reserves in each of the Regions approached \$2,856 per household in Peel, \$1,919 per household in York, \$1,527 in Halton, \$1,462 in Durham and \$1,115 in Metro.

Figure 4-5

Reserves Per Household



Source: MARS, 1990, Ministry of Municipal Affairs

4.2 DURHAM REGION

Table 4-3 summarizes the financial profile for Durham Region and its constituent area municipalities. A complete financial profile is presented in Schedule A.

4.2.1 Property Assessment, Tax and Other Revenue

On average, residential assessment in Durham Region in 1990 approached 74 percent of the total tax base, with the commercial/industrial sector representing the remaining 26 percent. This residential/commercial split, however, ranged quite considerably. On the one hand, the City of Oshawa maintained a commercial/industrial sector that represented 41 percent of the tax base. Ajax, Pickering and Whitby maintained commercial/industrial ratios between 20 and 25 percent. In the smaller municipalities, however, the commercial/industrial sectors ranged between 10 and 15 percent of the tax base.

On average, residential property taxes in Durham Region approached \$1,993 per household in 1990. This consisted of \$481.00 for local purposes; \$341.00 per household for the Regional levy; \$210 in direct water charges and, \$960 for school purposes. In 1990, the school portion of property taxes approached 48 percent, with the Regional levy approaching 17 percent and the local levy being 24 percent. While property taxes for Regional and local purposes totalled \$189 million in 1990, 65 percent (\$124 million) was derived from the residential sector with 35 percent (\$65 million) paid by the commercial/industrial sector.

In total in 1990, property taxes represented 46 percent of all of the municipalities revenue sources. Provincial and Federal grants totalled \$117 million in 1990 and this represented 24.7 percent of total revenue. Similarly, program revenue (user charges, water revenues, recreation fees, etc.) totalled \$100 million in 1990 representing 19 percent. On average, non-tax revenues approached \$2,053 per household in Durham Region in 1990.

4.2.2 Operating Expenditures

In total, operating expenditures in the Durham area approached \$476 million in 1990. The Region itself accounted for \$278 million, or 58 percent of total. Regional expenditures primarily related to Social Services -- 102.4 million; Waterworks and Sanitary Sewage -- \$70.9 million; and, Police -\$44.9 million. Local expenditures, on the other hand, primarily related to Road Maintenance and Repair - \$61.8 million; Recreation - \$48.0 million; and, Fire Protection - \$33.8 million.

Waste Management costs in Durham Region (Region and area municipalities) totalled \$29.5 million in 1990. When the 1992 budget figures of \$6.2 million for waste diversion (shown in the previous chapter) are compared, it can be shown that waste diversion represented 21 percent of the Region's 1990 waste management budget. Similarly, waste diversion represented 1.1 percent of the total area's 1990 operating expenditures of \$475 million.

When expressed on a per household basis* Regional expenditures approach \$2,035.00 and local expenditures average \$1,455.00 per household. In total, municipal operating costs exceed \$3,490.00 per household.

4.2.3 Capital Expenditures and Reserves

In 1990, capital expenditures for the Durham area (Region and area municipalities) approached \$137 million and this consisted mainly of Road Maintenance and Repair - \$59.1 million; Water and sewer - \$24.7 million; Recreation - \$29.7 million; General Government - \$7.3 million, Police and Fire Protection - \$6.3 million and other capital costs - \$9.9 million. These capital expenditures were funded from: reserves and reserve funds - 39 percent; general tax revenue 38 percent; Provincial Grants - 14 percent; debenture borrowing - 5 percent and other revenue 4 percent.

Total outstanding debt in the Durham area in 1990 approached \$35.3 million, of which \$21.8 was held by the Region. This represented an average of \$260.00 per household when both the Region and area municipalities are combined. To finance this debt, debt charges in the Durham area total \$10.9 million per year and this represented about \$80.00 per household. When expressed as a percentage of expenditures, which is the Ministry of Municipal Affairs debt capacity guideline, debt charges for the entire Regional area in 1990 represented 2.3 percent.

In 1990, reserve funds totalled 199.3 million for both the Region and the area municipalities. The Region itself maintained \$101.6 million in reserves and reserve funds while the area municipalities maintained \$97.7 million. When combined, these funds represented a 40 percent coverage of annual operating expenditures and, in total, these funds approach \$1,462.00 per household.

TABLE 4.3

DURHAM REGION FINANCIAL PROFILE

REGION OF DURHAM	RMD	Oshawa	Ajax	Newcastle	Pickering	Whitby	Brock	Scugog	Uxbridge	TOTAL
HOUSEHOLDS	136,322	47,720	17,135	15,982	20,128	19,266	4,468	6,700	4,923	136,322
ASSESSMENT & TAX										
Residential Portion Percentage	74.2	58.9	79.6	85.1	79.6	75.6	88.2	89.3	87.2	74.2
Commercial/Other Portion Percentage	25.8	41.1	20.4	14.9	20.4	24.4	11.8	10.7	12.8	25.8
Tax Levy										
Average Residential Share of Tax Levy \$ per Household										
- Local	481.03									
- Regional	341.12									
- School Board	961.25									
- Direct Charges	210.00									
Total Tax Levy	1,993.40									
REVENUE DISTRIBUTION										
Property Tax %	39.3	62.0	63.8	53.3	42.3	57.1	59.8	58.9	53.3	46.0
Grants %	29.2	15.6	9.3	18.3	26.8	15.2	22.5	22.3	18.1	24.7
Program & Other %	23.4	7.3	15.6	18.6	17.5	15.1	7.7	9.2	15.4	19.3
Fees & Service Charges %	8.1	15.2	11.3	9.8	13.4	12.6	10.1	9.6	13.1	10.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average NonTax Revenue/Household	1,436.12	606.62	480.71	579.21	927.22	618.03	414.28	361.34	577.09	2,053.23
OPERATING EXPENDITURES										
Operating Expenditures (\$000)	277,513	77,259	22,425	20,628	32,621	28,367	4,835	5,986	6,082	475,716
Per Household \$ Cost	2,035.72	1,619.01	1,308.72	1,290.70	1,620.68	1,472.39	1,082.14	893.43	1,235.43	3,489.65
Solid Waste Management (\$000)	22,690	1,884	729	1,701	649	1,178	121	341	192	29,485
Per Household \$ Cost	166.44	39.48	42.54	106.43	32.24	61.14	27.08	50.90	39.00	216.29
*Net Waste Diversion Budget (\$000)	5,051									5,051
Per Household \$ Cost	37.05									37.05
% Waste Diversion to Operating Costs	1.8									1.1
DEBT										
Debt Outstanding (\$000)	21,840	5,683	691	5,590	979	408	51	0	51	35,293
Per Household \$ Cost	160.21	119.09	40.33	349.77	48.64	21.18	11.41	0.00	10.36	258.89
Debt Charges (\$000)	7,634	1,302	222	988	392	119	131	63	33	10,884
Per Household \$ Cost	56.00	27.28	12.96	61.82	19.48	6.18	29.32	9.40	6.70	79.84
RESERVES/RESERVE FUNDS										
Reserves/Reserve Funds (\$000)	101,633	35,766	10,262	14,327	13,409	18,471	1,820	1,705	1,909	199,302
Per Household \$ Cost	745.54	749.50	598.89	896.45	666.19	958.74	407.34	254.48	387.77	1,461.99

SOURCE: Ministry of Municipal Affairs - MARS FIR's 1990 *Future Urban Research Budget Analysis

4.3 METROPOLITAN TORONTO

4.3.1 Property Assessment, Tax and Other Revenue

On average, residential assessment in Metropolitan Toronto Region in 1990 approached 53 percent of the total tax base, with the commercial/industrial sector representing the remaining 47 percent. This residential/commercial split is relatively consistent throughout Metro except for the smaller municipalities. The City of Toronto maintained the highest commercial ratio in 1990 at 57.9 percent, while Etobicoke, Scarborough, and North York ranged between commercial ratios of 38 to 46 percent. At the same time, York and East York, however, maintained a commercial/industrial sector that represented 27 percent of the tax base.

On average, residential property taxes in Metropolitan Toronto Region approached \$2,167 per household in 1990. This consisted of \$246.00 for local purposes; \$620.00 per household for the Regional levy; \$149.00 for direct water charges, and, \$1,152 for school purposes. In 1990, the school portion of property taxes approached 53 percent, with the Regional levy approaching 29 percent with the local levy being 11 percent. While property taxes for Regional and local purposes totalled \$1.7 billion in 1990, 46 percent (\$804.3 million) was derived from the residential sector with 54 percent (\$922.7 million) paid by the commercial/industrial sector.

In total in 1990, property taxes represented 42 percent of all of the municipalities revenue sources. Provincial and Federal grants totalled \$1.0 billion in 1990 and this represented 24 percent of total revenue. Similarly, program revenue (user charges, water revenues, recreation fees, etc.) totalled \$740.3 million in 1990 and this represented 15 percent. On average, non-tax revenues approached \$3,150.00 per household in Metropolitan Toronto Region in 1990.

4.3.2 Operating Expenditures

In total, operating expenditures in Metropolitan Toronto Region approached \$4.5 billion in 1990. Metro itself accounted for \$3.1 billion, with the area municipalities totalling \$1.4 billion. Metro expenditures primarily related to Social Services -- \$924.5 million; Transportation -- \$867.9 million; Police -- \$523.9 million; and, Waterworks and Sanitary Sewage -- \$194.2 million. Local expenditures, on the other hand, primarily related to Recreation - \$330.7 million; General Government -- \$294.0 million; Fire Protection - \$262.1 million; and, Road Maintenance and Repair - \$222.7 million.

Waste Management costs in Metropolitan Toronto (Region and area municipalities) totalled \$270.9 million in 1990. When the 1992 budget figures of \$50.6 million for waste diversion are compared, it can be shown that waste diversion represented 18 percent of Metro's 1990 waste management budget. Similarly, waste diversion represented 1.0 percent of the total area's 1990 operating expenditures of \$4.5 billion.

When expressed on a per household basis Metro's expenditures approach \$3,478.00 and local expenditures average \$1,637.00 per household. In total, municipal operating costs exceed \$5,115.00 per household.

4.3.3 Capital Expenditures and Reserves

In 1990, capital expenditures for the Metropolitan Toronto area (Region and area municipalities) approached \$796 million and this consisted mainly of Transportation and Road Maintenance - \$271.4 million; Water and sewer - \$126.6 million; General Government - \$86.5 million; Recreation - \$70.2 million; Waste Management - \$59.1 million and, other capital spending -- \$182.2 million. These capital expenditures were funded from: general tax revenue 26 percent; reserves and reserve funds - 26 percent; Provincial Grants - 24 percent; debenture borrowing - 11 percent and other capital financing - 13 percent.

Total outstanding debt in the Metropolitan Toronto area in 1990 approached \$697 million, of which \$430.5 was held by Metro. This represented an average of \$789.00 per household when both the Metro and area municipalities are combined. To finance this debt, debt charges in the Metropolitan Toronto area total \$193.1 million per year and this represented about \$218.00 per household. When expressed as a percentage of expenditures, which is the Ministry of Municipal Affairs debt capacity guideline, debt charges for the entire Regional area in 1990 represented 4.3 percent.

In 1990, reserve funds totalled 986.5 million for both the Metro and the area municipalities. Metro itself maintained \$394.7 million in reserves and reserve funds while the area municipalities maintained \$592 million. When combined, these funds represented a 21 percent coverage of annual operating expenditures and, in total, these funds approach \$1,115.00 per household.

TABLE 4.4

METRO TORONTO FINANCIAL PROFILE

METRO TORONTO & REGION	Metro	Toronto	Etobicoke	Scarborough	North York	York	East York	TOTAL
HOUSEHOLDS	884,421	286,218	116,467	174,530	205,989	56,266	44,951	884,421
ASSESSMENT & TAX								
Residential Portion Percentage	53.1	42.1	53.8	62.2	59.2	73.3	72.8	53.1
Commercial/Other Portion Percentage	46.9	57.9	46.2	37.8	40.8	26.7	27.2	46.9
Tax Levy								
Average Residential Share of Tax Levy \$ per Household								
- Local		246.04						
- Regional		620.73						
- Direct Charges		149.00						
- School Board		1,151.70						
Total Tax Levy		2,167.47						
REVENUE DISTRIBUTION								
Property Tax %	37.4	49.5	49.0	50.3	48.4	54.9	55.2	41.9
Grants %	28.9	17.7	14.4	16.9	13.6	15.9	14.8	24.2
Program & Other %	8.8	23.9	29.8	29.0	30.0	25.4	27.0	15.4
Fees & Service Charges %	24.8	8.9	6.8	3.7	8.0	3.7	3.1	18.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Non-Tax Revenue (\$000)	1,907,926	369,117	110,252	140,291	196,282	35,887	26,953	2,786,708
Average NonTax Revenue/Household	2,157.26	1,289.64	946.64	803.82	952.88	637.81	599.61	3,150.88
OPERATING EXPENDITURES								
Operating Expenditures (\$000)	3,075,181	637,011	167,842	227,809	301,609	66,242	48,313	4,524,007
Per Household \$ Cost	3,477.06	2,225.61	1,441.11	1,305.27	1,464.20	1,177.30	1,074.79	5,115.22
Solid Waste Management (\$000)	196,195	31,074	8,615	9,747	18,849	3,573	2,883	270,936
Per Household \$ Cost	221.83	108.57	73.97	55.85	91.50	63.50	64.14	306.34
*Net Waste Diversion Budget (\$000)	20,280	8,432	1,789	8,151	3,329	717	1,536	44,234
Per Household \$ Cost	22.93	29.46	15.36	46.70	16.16	12.74	34.17	50.01
% Waste Diversion to Operating Costs	0.7	1.3	1.1	3.6	1.1	1.1	3.2	1.0
DEBT								
Debt Outstanding (\$000)	430,464	133,954	43,205	13,840	36,274	15,940	23,341	697,018
Per Household \$ Cost	486.72	468.01	370.96	79.30	176.10	283.30	519.25	788.11
Debt Charges (\$000)	127,175	32,533	9,419	5,450	9,597	4,520	4,441	193,135
Per Household \$ Cost	143.79	113.67	80.87	31.23	46.59	80.33	98.80	218.37
RESERVES/RESERVE FUNDS								
Reserves/Reserve Funds (\$000)	394,673	298,158	50,681	113,321	106,627	12,384	10,710	986,554
Per Household \$ Cost	446.25	1,041.72	435.15	649.29	517.63	220.10	238.26	1,115.48

SOURCE: Ministry of Municipal Affairs -- MARS FIR,s 1990 *Future Urban Research Budget Analysis

4.4 YORK REGION

4.4.1 Property Assessment, Tax and Other Revenue

On average, residential assessment in York Region in 1990 approached 73 percent of the total tax base, with the commercial/industrial sector representing the remaining 27 percent. This residential/commercial split, however, ranged quite considerably. On the one hand, the City of Vaughan maintained a commercial/industrial sector that represented 36 percent of the tax base. Aurora, Markham, Newmarket and Richmond Hill maintained commercial/industrial ratios between 22 and 28 percent. In the smaller municipalities, however, the commercial/industrial sectors ranged between 7 and 16 percent of the tax base.

On average, residential property taxes in York Region approached \$2,958 per household in 1990. This consisted of \$314.00 for local purposes; \$519.00 per household for the Regional levy; \$208.00 in direct water charges and, \$1,917 for school purposes. In 1990, the school portion of property taxes approached 65 percent, with the Regional levy approaching 18 percent with the local levy being 11 percent. While property taxes for Regional and local purposes totalled \$207 million in 1990, 64 percent (\$133.6 million) was derived from the residential sector with 36 percent (\$73.6 million) paid by the commercial/industrial sector.

In total in 1990, property taxes represented 52 percent of all of the municipalities revenue sources. Provincial and Federal grants totalled \$84.7 million in 1990 and this represented 18 percent of total revenue. Similarly, program revenue (user charges, water revenues, recreation fees, etc.) totalled \$100.5 million in 1990 and this represented 21 percent. On average, non-tax revenues approached \$1,561.00 per household in York Region in 1990.

4.4.2 Operating Expenditures

In total, operating expenditures in York Region approached \$438 million in 1990. The Region itself accounted for \$173 million, with the area municipalities totalling \$265 million. Regional expenditures primarily related to Social Services -- \$53.8 million; Police -- \$51.5 million; and, Waterworks and Sanitary Sewage -- \$41.6 million. Local expenditures, on the other hand, primarily related to Recreation - \$66.4 million; Road Maintenance and Repair - \$62.1 million; and, Fire Protection - \$40.2 million.

Waste Management costs in York Region (Region and area municipalities) totalled \$20.8 million in 1990. When the 1992 budget figures of \$10.8 million for waste diversion (shown in the previous chapter) are compared, it can be shown that waste diversion represented 51 percent of the Region's 1990 waste management budget. Similarly, waste diversion

represented 1.8 percent of the total area's 1990 operating expenditures of \$438 million. When expressed on a per household basis Regional expenditures approach \$1,160.00 and local expenditures average \$1,780.00 per household. In total, municipal operating costs exceed \$2,940.00 per household.

4.4.3 Capital Expenditures and Reserves

In 1990, capital expenditures for the York area (Region and area municipalities) approached \$200 million and this consisted mainly of Road Maintenance and Repair - \$69.4 million; Recreation - \$47.7 million; General Government - \$36.4 million; Water and sewer - \$29.3 million and capital costs for other purposes -- \$17.2 million. These capital expenditures were funded from: reserves and reserve funds - 51 percent; debenture borrowing - 22 percent; Provincial Grants - 9 percent; general tax revenue 9 percent and other capital financing --9 percent.

Total outstanding debt in the York area in 1990 approached \$39.2 million, of which \$14.8 was held by the Region. This represented an average of \$263.00 per household when both the Region and area municipalities are combined. To finance this debt, debt charges in the York area total \$9.2 million per year and this represented about \$62.00 per household. When expressed as a percentage of expenditures, which is the Ministry of Municipal Affairs debt capacity guideline, debt charges for the entire Regional area in 1990 represented 2.1 percent.

In 1990, reserve funds totalled 285.9 million for both the Region and the area municipalities. The Region itself maintained \$91.8 million in reserves and reserve funds while the area municipalities maintained \$194.1 million. When combined, these funds represented a 65 percent coverage of annual operating expenditures and, in total, these funds approach \$1,919.00 per household.

YORK REGION FINANCIAL PROFILE

Table 4-5

REGION OF YORK	RMV	Aurora	Markham	Newmarket	Richmond Hill	Vaughan	Whitchurch Stouffville	East Gwillimbury	Georgina	King	TOTAL
<u>HOUSEHOLDS</u>	149,036	9,081	42,930	13,121	24,380	29,194	6,228	5,629	12,537	5,936	149,036
<u>ASSESSMENT & TAX</u>											
Residential Portion Percentage	73.5	76.5	71.7	76.1	77.7	63.6	83.7	91.7	89.5	92.3	73.5
Commercial/Other Portion %	26.5	23.5	28.3	23.9	22.3	36.4	16.3	8.3	10.5	7.7	26.5
<u>Tax Levy</u>											
Average Residential Share of Tax Levy \$ per Household											
- Local											
- Regional											
- Direct Charges											
- School Board											
Total Tax Levy	2,957.64										
<u>REVENUE DISTRIBUTION</u>											
Property Tax %	62.9	57.5	44.8	40.1	45.0	44.6	51.9	51.5	54.1	48.9	52.0
Grants %	33.8	9.9	9.2	9.4	8.0	7.3	11.8	16.6	15.3	17.1	18.1
Program & Other %	0.2	19.9	29.9	35.0	40.6	33.9	25.3	22.9	24.1	20.6	20.7
Fees & Service Charges & Total	3.1	12.7	16.1	15.4	6.4	14.2	11.1	9.0	6.5	13.4	9.2
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Non-Tax Revenue (\$000)	64,907	6,475	44,746	16,083	33,951	47,706	4,386	3,469	7,268	3,675	232,666
Average NonTax Revenue \$ per Household	435.51	713.03	1,042.30	1,225.74	1,392.58	1,634.10	704.24	616.27	579.72	619.10	1,561.14
<u>OPERATING EXPENDITURES</u>											
Operating Expenditures (\$000)	172,648	13,436	70,521	20,008	53,928	71,280	8,468	6,228	14,265	7,262	438,044
Per Household \$ Cost	1,158.43	1,479.57	1,642.70	1,524.88	2,211.98	2,441.60	1,359.67	1,106.41	1,137.83	1,223.38	2,939.18
Solid Waste Management (\$000)	0	975	5,903	2,313	2,216	5,701	873	526	1,264	1,037	20,808
Per Household \$ Cost	0.00	107.37	137.50	176.28	90.89	195.28	140.17	93.44	100.82	174.70	139.62
*Net Waste Divern Budget (\$000)	1,426	269	1,810	686	2,100	808	131	172	145	222	7,769
Per Household \$ Cost	9.57	29.62	42.16	52.28	86.14	27.68	21.03	30.56	11.57	37.40	52.13
% Waste Diversion to Operating Costs	0.8	2.0	2.6	3.4	3.9	1.1	1.5	2.8	1.0	3.1	1.8
<u>DEBT</u>											
Debt Outstanding (\$000)	14,869	29	4,466	2,312	6,004	4,027	1,361	468	5,639	37	39,212
Per Household \$ Cost	99.77	3.19	104.03	176.21	246.27	137.94	218.53	83.14	449.79	6.23	263.10
Debt Charges (\$000)	3,007	16	1,193	715	1,744	1,038	347	103	985	35	9,183
Per Household \$ Cost	20.18	1.76	27.79	54.49	71.53	35.56	55.72	18.30	78.57	5.90	61.62
<u>RESERVES/RESERVE FUNDS</u>											
Reserves/Reserve Funds (\$000)	91,868	16,328	50,421	1,547	63,652	42,401	6,650	1,944	6,452	4,718	285,981
Per Household % Cost	616.41	1,798.04	1,174.49	117.90	2,610.83	1,452.39	1,067.76	345.35	514.64	794.81	1,918.87

SOURCE: Ministry of Municipal Affairs - MARS FIR's 1990 *Future Urban Research Budget Analysis

4.5 PEEL REGION

Table 4-6 summarizes the financial profile for Peel Region and its constituent area municipalities. A complete financial profile is presented in Schedule A.

4.5.1 Property Assessment, Tax and Other Revenue

On average, residential assessment in Peel Region in 1990 approached 67 percent of the total tax base, with the commercial/industrial sector representing the remaining 33 percent. This residential/commercial split was relatively similar throughout Peel Region, except in Caledon. The City of Mississauga maintained a commercial/industrial sector that represented 35 percent of the tax base, while Brampton's ratio approached 32 percent. Caledon's ratio, on the other hand, approached 14 percent.*

On average, residential property taxes in Peel Region approached \$2,134 per household in 1990. This consisted of \$433.00 for local purposes; \$325.00 per household for the Regional levy; \$184.00 for direct water charges and, \$1,192 for school purposes. In 1990, the school portion of property taxes approached 56 percent, with the Regional levy approaching 15 percent and the local levy being 20 percent. While property taxes for Regional and local purposes totalled \$335 million in 1990, 60 percent (\$202.8 million) was derived from the residential sector with 40 percent (\$131.9 million) paid by the commercial/industrial sector. (This latter ratio is larger than the property assessment ratio for the commercial/industrial sector because this sector also pays business taxes in addition to property taxes.)

In total in 1990, property taxes represented 50 percent of all of the municipalities revenue sources. Provincial and Federal grants totalled \$139 million in 1990 and this represented 16 percent of total revenue. Similarly, program revenue (user charges, water revenues, recreation fees, etc.) totalled \$142.8 million in 1990 and this represented 17 percent. On average, non-tax revenues approached \$1,845 per household in Peel Region in 1990.

4.5.2 Operating Expenditures

In total, operating expenditures in Peel Region approached \$754 million in 1990. The Region itself accounted for \$386 million, with Mississauga totalling \$245 million, Brampton \$108 million and Caledon \$15.6 million. Regional expenditures primarily related to Social Services -- \$104 million; Waterworks and Sanitary Sewage -- \$99.1 million; and, Police - \$97.7 million. Local expenditures, on the other hand, primarily related to Road Maintenance and Repair - \$80.9 million; Recreation - \$76.0 million; and, Fire Protection - \$60.5 million.

Waste Management costs in Peel Region (Region and area municipalities) totalled \$57.5 million in 1990. When the 1992 budget figures of \$12.6 million for waste diversion (shown in the previous chapter) are compared, it can be shown that waste diversion represented 22 percent of the Region's 1990 waste management budget. Similarly, waste diversion represented 1.4 percent of the total area's 1990 operating expenditures of \$754 million.

When expressed on a per household basis Regional expenditures approach \$1,720.00 and local expenditures average \$1,645.00 per household. In total, municipal operating costs exceed \$3,365.00 per household.

4.5.3 Capital Expenditures and Reserves

In 1990, capital expenditures for the Peel area (Region and area municipalities) approached \$258 million and this consisted mainly of Road Maintenance and Repair - \$114.7 million; Recreation - \$50.9 million; Water and sewer - \$39.0 million; General Government - \$25.1 million, Waste Disposal - \$6.0 million and other capital costs -- \$22.3 million. These capital expenditures were funded from: reserves and reserve funds - 67 percent; Provincial Grants - 18 percent; general tax revenue 11 percent and other financing 4%. Debenture financing in 1990 only consisted of \$20,000 and this represents less than one percent of total capital financing.

Total outstanding debt in the Peel area in 1990 approached \$107.8 million, of which \$65.0 was held by the Region. This represented an average of \$481.00 per household when both the Region and area municipalities are combined. To finance this debt, debt charges in the Peel area total \$38.9 million per year and this represented about \$174.00 per household. When expressed as a percentage of expenditures, which is the Ministry of Municipal Affairs debt capacity guideline, debt charges for the entire Regional area in 1990 represented 5.2 percent.

In 1990, reserve funds totalled 640.0 million for both the Region and the area municipalities. The Region itself maintained \$275.6 million in reserves and reserve funds while the area municipalities maintained \$364.4 million. When combined, these funds represented a 80 percent coverage of annual operating expenditures and, in total, these funds approach \$2,856.00 per household.

Table 4-6

PEEL REGION FINANCIAL PROFILE

REGION OF PEEL	RMP	Brampton	Mississauga	Caledon	TOTAL
<u>HOUSEHOLDS</u>	224,092	70,195	142,738	11,159	224,092
<u>ASSESSMENT & TAX</u>					
Residential Portion Percentage	66.6	67.7	64.7	86.4	66.6
Commercial/Other Portion Percentage	33.4	32.3	35.3	13.6	33.4
<u>Tax Levy</u>					
Average Residential Share of Tax Levy \$ per Household					
- Local	433.97				
- Regional	324.98				
- Direct Charges	184.00				
- School Board	1,192.08				
Total Tax Levy	2,135.03				
<u>REVENUE DISTRIBUTION</u>					
Property Tax %	48.0	58.1	50.0	65.7	50.2
Grants %	21.8	10.1	16.6	15.9	16.8
Program & Other %	19.3	15.7	14.6	6.8	17.2
Fees & Service Charges %	11.0	16.0	18.9	11.6	15.8
Total	100.0	100.0	100.0	100.0	100.0
Non-Tax Revenue (\$000)	243,323	43,878	120,949	5,241	413,391
Average NonTax Revenue/Household	1,085.82	625.09	847.35	469.67	1,844.74
<u>OPERATING EXPENDITURES</u>					
Operating Expenditures (\$000)	385,619	108,095	244,922	15,607	754,243
Per Household \$ Cost	1,720.81	1,539.92	1,715.89	1,398.60	3,365.77
Solid Waste Management (\$000)	43,860	3,877	8,809	973	57,519
Per Household \$ Cost	195.72	55.23	61.71	87.19	256.68
*Net Waste Diversion Budget (\$000)	1,827	3,169	5,111	561	10,668
Per Household \$ Cost	8.15	45.15	35.81	50.27	47.61
% Waste Diversion to Operating Costs	0.5	2.9	2.1	3.6	1.4
<u>DEBT</u>					
Debt Outstanding (\$000)	65,032	36,584	5,098	1,087	107,801
Per Household \$ Cost	290.20	521.18	35.72	97.41	481.06
Debt Charges (\$000)	25,832	9,458	3,306	355	38,951
Per Household \$ Cost	115.27	134.74	23.16	31.81	173.82
<u>RESERVES/RESERVE FUNDS</u>					
Reserves/Reserve Funds (\$000)	275,651	63,373	297,548	3,491	640,063
Per Household \$ Cost	1,230.08	902.81	2,084.57	312.84	2,856.25

SOURCE: Ministry of Municipal Affairs -- MARS FIR's 1990 *Future Urban Research Budget Analysis

4.6 HALTON REGION

4.6.1 Property Assessment, Tax and Other Revenue

On average, residential assessment in Halton Region in 1990 approached 75 percent of the total tax base, with the commercial/industrial sector representing the remaining 25 percent. This residential/commercial split was relatively similar throughout Halton Region. The Town of Oakville maintained the largest commercial/industrial sector, at approximately \$2.5 billion in market value, followed closely by Burlington at \$2.2 billion. The Town of Milton's commercial/industrial sector, however, maintained the largest share of the local tax base at 30.1 percent.

On average, residential property taxes in Halton Region approached \$2,207 per household in 1990. This consisted of \$502.00 for local purposes; \$333.00 per household for the Regional levy; \$224.00 in direct water charges and, \$1,148 for school purposes. In 1990, the school portion of property taxes approached 52 percent, with the Regional levy approaching 15 percent, the local levy being 23 percent and direct water billings approached 10 percent. While property taxes for Regional and local purposes totalled \$146 million in 1990, 68 percent (\$99.5 million) was derived from the residential sector with 32 percent (\$46.5 million) paid by the commercial/industrial sector. (This latter ratio is larger than the property assessment ratio for the commercial/industrial sector because this sector also pays business taxes in addition to property taxes.)

In total in 1990, property taxes represented 52 percent of all of the municipalities revenue sources. Provincial and Federal grants totalled \$61 million in 1990 which represented 17 percent of total revenue. Similarly, program revenue (user charges, water revenues, recreation fees, etc.) totalled \$65.5 million in 1990 which represented 18 percent. On average, non-tax revenues approached \$1,633 per household in Halton Region in 1990.

4.6.2 Operating Expenditures

In total, operating expenditures in Halton Region approached \$318 million in 1990. The Region itself accounted for \$167 million, with both Burlington and Oakville exceeding \$60 million. Regional expenditures primarily related to Waterworks and Sanitary Sewage -- \$46.1 million; Social Services - \$43.9 million; and, Police - \$35.7 million. Local expenditures, on the other hand, primarily related to Road Maintenance and Repair - \$49.9 million; Recreation - \$40.8 million; and, Fire Protection - \$24.4 million.

Waste Management costs in Halton Region (Region and area municipalities) totalled \$27.5 million in 1990. When the 1992 budget figures of \$4.4 million for waste diversion (shown

in the previous chapter) are compared, it can be shown that waste diversion represented 20 percent of the Region's 1990 waste management budget. Similarly, waste diversion represented 0.7 percent of the total area's 1990 operating expenditures of \$318 million.

Regional expenditures expressed on a per household basis approach \$1,574.00 and local expenditures average \$1,430.00 per household. In total, municipal operating costs exceed \$3,000.00 per household.

4.6.3 Capital Expenditures and Reserves

In 1990, capital expenditures for the Halton area (Region and area municipalities) approached \$128 million and this consisted primarily of Road Maintenance and Repair - \$44.8 million; Water and sewer - \$24.4 million; Recreation - \$18 million; General Government - \$17.4 million, Waste Disposal - \$16.4 million and other capital costs -- \$7.0 million. Capital expenditures were funded from: reserves and reserve funds - 49 percent; Provincial Grants - 18 percent; general tax revenue 14 percent; debenture borrowing - 12 percent and other revenue 7%.

Total outstanding debt in Halton in 1990 approached \$78.1 million, of which \$52.5 was held by the Region. This represented an average of \$738.00 per household when both the Region and area municipalities were combined. To pay this debt, debt charges in Halton total \$21.2 million per year and this represented about \$200.00 per household. When expressed as a percentage of expenditures, which is the Ministry of Municipal Affairs debt capacity guideline, debt charges for the entire Regional area in 1990 represented 6.7 percent. (A ratio approaching 20 percent is considered high.)

In 1990, reserve funds totalled \$161.8 million for both the Region and the area municipalities. The Region itself maintained \$68.7 million in reserves and reserve funds while the area municipalities maintained \$93.1 million. When combined, these funds represented a 50 percent coverage of annual operating expenditures and, in total, these funds approach \$1,527.00 per household.

Table 4-7

HALTON REGION FINANCIAL PROFILE

REGION OF HALTON	RMH	Burlington	Halton Hills	Milton	Oakville	TOTAL
<u>HOUSEHOLDS</u>	105,943	46,332	11,857	10,129	37,625	105,943
<u>ASSESSMENT & TAX</u>						
Residential Portion Percentage	74.8	75.3	78.9	69.9	74.6	74.8
Commercial/Other Portion Percentage	25.2	24.7	21.1	30.1	25.4	25.2
<u>Tax Levy</u>						
Average Residential Share of Tax Levy \$ per Household						
- Local	502.13					
- Regional	333.07					
- Direct Charges	224.00					
- School Board	1,148.65					
Total Tax Levy	2,207.85					
<u>REVENUE DISTRIBUTION</u>						
Property Tax %	47.3	57.4	59.8	56.2	58.0	51.8
Grants %	21.1	15.5	17.3	18.4	14.1	17.1
Program & Other %	22.3	11.5	12.1	15.6	13.7	18.3
Fees & Service Charges %	9.3	15.5	10.8	9.8	14.1	12.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Non-Tax Revenue (\$000)	108,590	26,955	5,782	5,572	26,163	173,062
Average NonTax Revenue/Household	1,024.99	581.78	487.64	550.10	695.36	1,633.54
<u>OPERATING EXPENDITURES</u>						
Operating Expenditures (\$000)	166,781	62,396	14,237	12,629	61,997	318,040
Per Household \$ Cost	1,574.25	1,346.72	1,200.73	1,246.82	1,647.76	3,001.99
Solid Waste Management (\$000)	22,489	1,721	400	385	2,552	27,547
Per Household \$ Cost	212.27	37.14	33.74	38.01	67.83	260.02
*Net Waste Diversion Budget (\$000)	2,263					2,263
Per Household \$ Cost	21.36					21.36
% Waste Diversion to Operating Costs	1.4					0.7
<u>DEBT</u>						
Debt Outstanding (\$000)	52,596	15,588	2,811	1,115	6,038	78,148
Per Household \$ Cost	496.46	336.44	237.08	110.08	160.48	737.64
Debt Charges (\$000)	14,873	3,958	642	375	1,400	21,248
Per Household \$ Cost	140.39	85.43	54.15	37.02	37.21	200.56
<u>RESERVES/RESERVE FUNDS</u>						
Reserves/Reserve Funds (\$000)	68,677	40,010	6,289	7,340	39,484	161,800
Per Household \$ Cost	648.24	863.55	530.40	724.65	1,049.41	1,527.24

SOURCE: Ministry of Municipal Affairs - MARS FIR's 1990 *Future Urban Research Budget Analysis

4.7 FUTURE CAPITAL EXPENDITURES

This section of the report utilizes the future capital costs and obligations of each Region in the GTA, along with the proposed financing structure to enable a comparison of future total capital costs among the GTA Regions. As indicated, the future capital obligations/projections were derived from the capital budgets and forecasts that Future Urban Research received from each of the area municipalities within the GTA except where noted otherwise. Future Urban Research has reviewed the capital budgets and has classified the capital expenditures and financing methods into standard categories for each Region for ease of comparison. The following represents a list of the standard categories for each:

Capital Expenditure Categories

- General Government (administration, finance)
- Protection (fire, police)
- Transportation (roads, parking)
- Environment (water, sewer)
- Health and Social (library, community services)
- Recreation (parks, recreational facilities)
- Planning and Other
- Waste Management (diversion, solid waste)

Capital Financing Categories

- Tax Revenue
- Debentures
- Reserves
- Grants
- Other

Table 4-8 presents a summary of the 1993 to 1997 capital forecasts for the Region's within the GTA. In total the GTA municipalities have identified \$11.3 billion in forecast capital projects to be undertaken during the 1993 through 1997 period. By comparison, the GTA municipalities have identified a total of \$167.8 million in capital projects for waste diversion. This represents 1.5% of the total capital forecast. This capital commitment for diversion activities was described in detail in Chapter 3 of this report.

Table 4-8
1993 - 1997 Capital Forecast and Source of Funding, By Region

Region	(\$000's)	(%)
Durham		
Tax Revenue	204,000	25%
Debentures	130,000	16%
Reserves	155,000	19%
Grants	211,000	26%
Other	114,000	14%
Total Revenue	814,000	100%
Total Expenditure	814,000	
Metro		
Tax Revenue	872,000	13%
Debentures	1,946,000	29%
Reserves	940,000	14%
Grants	2,819,000	42%
Other	134,000	2%
Total Revenue	6,711,000	100%
Total Expenditure	6,711,000	
York		
Tax Revenue	267,000	20%
Debentures	200,000	15%
Reserves	640,000	48%
Grants	133,000	10%
Other	93,000	7%
Total Revenue	1,333,000	100%
Total Expenditure	1,333,000	

Table 4-8

1993 - 1997 Capital Forecast and Source of Funding, By Region
(Continued)

Region	(\$000's)	(%)
Peel		
Tax Revenue	187,000	11%
Debentures	323,000	19%
Reserves	765,000	45%
Grants	306,000	18%
Other	119,000	7%
Total Revenue	1,700,000	100%
Total Expenditure	1,700,000	
Halton		
Tax Revenue	104,000	14%
Debentures	215,000	29%
Reserves	275,000	37%
Grants	149,000	20%
Other	0	0%
Total Revenue	743,000	100%
Total Expenditure	743,000	
Total GTA	11,301,000	100.0%

Source: 1993 Municipal Capital Budgets

4.7.1 Durham Region

An examination of the Durham Region 1993 Capital Budget and forecast to 1997 as well as an internal report prepared by the Region indicated that an estimated \$814 million has been allocated/proposed for future capital expenditures. Further, approximately \$467 million, or 57.4% of the total, has been allocated by the Region with the area municipalities allocating the remainder (\$347 million). A review of the proposed capital financing indicated approximately 25% would be financed through tax revenue, 16% through debentures, 19% through reserves, 26% through grants and the remainder (14%) through other sources.

By comparison, Durham Region has indicated that \$3.9 million in capital programs will be committed during the 1993 through 1997 period to waste diversion. This diversion commitment represents 0.5% of the proposed capital program.

4.7.2 Metro Toronto

An examination of Metro's 1993 - 1997 Capital Program, and a combination of the 1992 and 1993 capital budgets and forecasts for the six area municipalities indicated that an estimated \$6.7 billion has been allocated/proposed for future capital expenditures. Further, approximately \$4.9 billion, or 74% of the total, has been allocated by the Region with the area municipalities allocating the remainder (\$1.7 billion). Further, approximately 60% of the proposed expenditures would be for transportation.

By comparison, Metro has indicated that \$69.5 million in capital programs will be committed during the 1993 through 1997 period to waste diversion. This diversion commitment, described in detail below, represents 1.0% of the proposed capital program.

In terms of proposed future capital expenditures, Metro and the area municipalities have proposed increases in capital expenditures from either 1992/1993 to 1996/1997. More specifically, Metro has proposed an increase of approximately 20% per annum from 1993 to 1997, Toronto has proposed an increase of 6% per annum from 1993 to 1997, and Scarborough has proposed an increase of 11% per annum from 1993 to 1997, Etobicoke has proposed an increase of 23% per annum from 1992 to 1996. Although, it should be noted that in 1993, East York has proposed major increase in capital expenditures for the construction of a recreational facility.

A review of the proposed capital financing indicated approximately 13% would be financed through tax revenue, 29% through debentures, 14% through reserves, and 42% through grants and 2% from other sources.

4.7.3 York Region

An examination of York Region's 1992 Capital Budget and forecast to 1996, and a combination of the 1992 and 1993 capital budgets and forecasts for the nine area municipalities indicated that an estimated \$1.3 billion has been allocated/proposed for future capital expenditures. Further, approximately \$559 million, or 42% of the total, has been allocated by the Region with the area municipalities allocating the remainder (\$773 million). However, it should be noted that due to the fact that Future Urban Research was unable to obtain the capital forecasts from Markham, Newmarket, Vaughan, Whitchurch/Stouffville, and Georgina the projections for these municipalities were, in the interest of conservatism, kept stable with the latest available year for which we had capital information. According to the Commissioner of Finance for York Region, many of the area municipalities within the Region do not complete capital budgets and forecasts, however this practice is currently under review at the Regional level.

By comparison, York has indicated that \$2.8 million in capital programs will be committed during the 1993 through 1997 period to waste diversion. This diversion commitment, described in detail below, represents 0.2% of the proposed capital program.

A review of the proposed capital financing indicated approximately 20% would be financed through tax revenue, 15% through debentures, 48% through reserves, and 10% through grants and 7% from other sources.

4.7.4 Peel Region

An examination of Peel Region's 1993 Capital Budget and forecast to 1997, and a combination of the 1992 and 1993 capital budgets and forecasts for the three area municipalities indicated that an estimated \$1.7 billion has been allocated/proposed for future capital expenditures. Further, approximately 50% of the total has been allocated by the Region with the area municipalities allocating the remainder. Approximately 70% of the proposed expenditures would be for transportation, 33% for recreation and 21% for waste management.

By comparison, Peel has indicated that \$90.3 million in capital programs will be committed during the 1993 through 1997 period to waste diversion. This diversion commitment, described in detail below, represents 5.3% of the proposed capital program.

In terms of proposed future capital expenditures, the area municipalities have proposed increases in capital expenditures from 1993 to 1997. More specifically, Brampton has proposed an increase of 38.1% per annum from 1993 to 1997, and Caledon has proposed an increase of 63% per annum from 1993 to 1997 and Mississauga has proposed an increase of 7% per annum from 1993 to 1997. The Region has proposed capital

expenditures that when annualized from 1993 to 1997 actually decrease by 6% but this is a result of decrease in proposed expenditures in 1997. In 1994 and 1996, the Region has proposed increases of 43% and 87% respectively from 1993 levels. The proposed increase in expenditures in 1994 and 1996 stem primarily from solid waste and health and social.

A review of the proposed capital financing indicated approximately 11% would be financed through tax revenue, 19% through debentures, 45% through reserves, and 18% through grants and 7% from other sources.

4.7.5 Halton Region

An examination of Halton Region's 1993 Preliminary Rate Supported Budget and the 1993 Preliminary Tax Supported Budget which included the 1994 to 2002 budget forecast, and the various area municipalities 1992 capital budgets and forecasts indicated that an estimated \$743 million has been allocated/proposed for future capital expenditures. Further, approximately \$359 million, or 48.3% of the total, has been allocated by the Region with the area municipalities allocating the remainder (\$384 million). Further, approximately 67% of the proposed expenditures would be for transportation (38%) and the environment (water and sewer, 29%).

By comparison, Halton Region has indicated that \$27.3 million in capital programs will be committed during the 1993 through 1997 period to waste diversion. This diversion commitment, described in detail below, represents 3.7% of the proposed capital program.

In terms of proposed future capital expenditures, the Region and the area municipalities except for Halton Hills and Milton have proposed increases in capital expenditures from either 1992/1993 to 1996/1997. More specifically, the Region has proposed an increase of approximately 5% per annum from 1993 to 1997, Burlington has proposed an increase of 14% per annum from 1992 to 1996, and Oakville has proposed an increase of 1% per annum from 1992 to 1996, while on the other hand Halton Hills and Milton have proposed a decrease in expenditures from 1992 to 1996 of 10% and 1% respectively.

A review of the proposed capital financing indicated approximately 14% would be financed through tax revenue, 29% through debentures, 37% through reserves, and 20% through grants.

4.7.6 Evaluation of the Effects of the Capital Forecast

With a total capital program of \$11.3 billion over the 1993 through 1997 period, the GTA municipalities estimate that they will receive a total of \$4.4 billion, or 39%, in taxes, user fees and reserve funds. The difference, \$6.9 billion (61%) represents debentures, grants and other contributions such as developer fees.

The magnitude of the GTA tax base is such, however, that a capital program of the above size has a medium effect on taxation. Table 4-9 shows that the net residential share of the annual capital cost of the program represents an average per household increase of 19.7% for the whole GTA over the five years of the capital program. If this program were phased annually in equal parts, the average tax increase would be slightly less than 5% per year. In comparison to the 19.8% GTA average, this tax increase ranges as high as 22.3% in both York Region and Metro Toronto to as low as 13.4% in Peel Region.

The procedure used to estimate these tax increases is shown on Table 4-9. It is noted that this procedure does not take into account the retirement of existing debt during the same period, which is particularly difficult to estimate. With this retirement, annual debt payments in the municipalities diminish. Therefore, if this aspect were included in the analysis, tax increases would be less than shown on Table 4-9.

Table 4-9

EFFECT OF FIVE YEAR CAPITAL PROGRAM

	Households	New Households	Total Future Households
Halton	106,420	28,930	135,350
Durham	136,135	59,710	195,845
York	150,485	68,433	218,918
Peel	229,670	92,441	322,111
Metro	864,663	68,097	932,760

	Net Capital Cost (after external funding)	Annual Cost of Program	Residential Share of Annual Costs	\$
Halton	319,308,110	49,754,618	60%	29,852,771
Durham	333,546,890	51,973,306	59%	30,664,251
York	466,563,650	72,699,990	70%	50,889,993
Peel	510,000,000	79,468,246	51%	40,528,805
Metro	2,818,746,000	439,217,255	48%	210,824,282
Total	4,448,164,650	693,113,416		362,760,103

	Residential Costs Per Household	Existing Municipal Taxation	Percent Increase
Halton	\$220.56	\$1,059.00	20.8%
Durham	\$156.57	\$1,032.00	15.2%
York	\$232.46	\$1,041.00	22.3%
Peel	\$125.82	\$942.00	13.4%
Metro	\$226.02	\$1,015.00	22.3%
Total	\$200.98	\$1,017.80	19.7%

Source: Future Urban Research
caresshr.xls

5.0 ASSESSMENT AND EVALUATION OF THE 3R's SYSTEM

5.1 OVERVIEW AND APPROACH

To examine the effects of the seven diversion system alternatives, the criteria and indicators originally developed in the initial stages of the study were used. These are listed as follows.

Potential Impact on Local Taxpayers

- Total Increase in Net General Municipal Levy
- Net General Municipal Levy, adjusted for commercial/industrial property assessment, expressed on per household basis

Potential for Impact on the Debt Burden on the Municipality

- Amount of Debenture Debt
- Annual Debt Payments as a Percentage of Expenditures
- Available Debt Capacity
(Former OMB/MMA guideline)

Potential Impact on Municipal Reserve Funds

- Total Amount of Reserve Funds
- Reserves per Household
- Reserves as a Percentage of Operating Expenditures

Potential for Impact on the Level of Municipal Service

- Total Municipal Wages, Salaries, Materials & Contract Expenditures per household
- Current Expenditures by Department per Household

Potential for Impact on the Provincial Treasury

- Amount of Provincial Funding

During the course of this study, however, it was found that reliance on this criteria had to be lessened. Due to budget and social contract considerations, the

amount of grant funding beyond the current Provincial fiscal year is uncertain. In the extreme, the Province may find it necessary to address the funding assistance of each 3R's alternative examined in this study on a case-by-case basis. Due to this, evaluations under this criteria became indeterminate. Actual resolution may possibly depend on actual funding negotiations with each Region.

Potential for Impact on Private Sector Industries

Amount of Private Sector Funding
Amount of Private Sector Costs
Amount of Costs Passed on Through Higher Prices
Amount of Private Sector Costs Financed Through Taxes,
Incentives, Economies, Etc.

The detailed effects analysis follows. Throughout this discussion, the alternatives are ranked. Those accorded the highest ranking had the lowest impact and those given the lowest rankings had the highest impacts.

Each technical appendix for the other study components were prepared, reviewed and revised concurrently. As a result, some revised information contained in the technical appendices reporting on alternative system cost and service (tonnage and diversion rates) is not wholly incorporated into this document. These revisions mostly represent minor differences in figures and should not significantly affect the result of this analysis. These revised information items will be incorporated into this municipal finance technical appendix when it is finalized after the public consultation stage of the EA process.

5.2 REGION OF DURHAM

Each of the system alternatives for the Region of Durham have been described in the Environmental Assessment document prepared by M.M. Dillon Limited, Consulting Engineers and Planners. There are, however, specific cost and revenue elements associated with each of the diversion alternatives. From a financial perspective, each system can be summarized as follows:

- a) Existing System: As described in the previously presented baseline documentation and system descriptions, this system does not include added costs or revenues beyond those that are already in place.
- b) Committed System: This system includes new capital or program items that would potentially change existing financing requirements. These are programs that have been identified as committed within the five year capital budgets. More specifically, the alternatives presented only include expenditures that could potentially increase the amount of tonnage diverted, therefore inflation increases to existing budget items have not been included. In total, Durham region is expected to incur \$3.9 million in capital

expenditures over the next five years.

- c) Direct Cost: This system would charge for the amount of garbage placed curbside. This suggests that Durham Region would have two options for charging for waste collection. Under a revenue neutral approach, no additional revenue would be charged for waste and diversion collection purposes from the home owners beyond what is now collected via municipal taxes. That is, added direct cost revenue would be netted from collection costs before household tax rates are determined.

Under an additional revenue direct cost system, garbage bag charges would be levied in addition to normal property taxes that include waste diversion and disposal collection costs. This extra revenue, while representing an added charge to the homeowner, would then be available to the Region to assist in financing other diversion and waste management activities. In this analysis, it was assumed that these added charges would yield approximately \$3.5 million per year to Durham Region. This approaches \$25 per household.

- d) Expanded Blue Box: Includes an additional cost of \$9.0 million for the construction of a new MRF or a further expansion to the existing MRF.
- e) Wet/Dry: This system would include significant capital costs, including:

- \$9.0 million for a new MRF or a further expansion to the existing MRF
- \$25.0 million for a new central in-vessel composting facility with a capacity of 50,000 tonnes
- \$11.0 million to provide roll-out carts to 110,000 households
- \$8.3 million for 56 new trucks

In the analysis, it is assumed that half of the cost of the trucks and roll-out carts is included in diversion budgets with the other half being debentured. This is done to recognize that to establish a wet/dry system a staging strategy will be necessary. In this way, the system will be phased over time and trucks will be replaced gradually as exiting vehicles wear out.

- f) Mixed Waste: This system would require a \$50.0 million expenditure for a mixed waste plant with a capacity of 112,000 tonnes per year (430 tonnes per day).

5.2.1 Potential Impact on Local Taxpayers

The following describes the net system effects on the local taxpayers. Table 5.2.1 shows that, when all elements are considered, gross costs in Durham Region may range from the existing level of \$5.1 million per year to \$20.8 million per year for the mixed waste systems. Moreover,

while the committed expansion program may present an annual operating cost of \$5.7 million per year, the direct cost/revenue neutral system may approach \$9.2 million per year, with a direct cost /added revenue system approaching \$12.7 million in annual levy costs.

Table 5.2.1

Cost of Alternative Diversion Systems
Net Annual Diversion Costs -- General Levy

System	Gross Costs	Net of Disposal Costs
Existing System	\$5,091,865	\$2,094,865
Committed Program	5,716,692	2,608,692
Direct Cost (Revenue Neutral) A	9,208,381	2,008,381
Direct Cost (Added Revenue) B	12,711,435	5,511,435
Expanded Blue Box	11,696,534	3,746,534
Wet / Dry	17,845,746	8,245,746
Mixed Waste (Low Diversion) A	20,784,455	10,434,455
Mixed Waste (High Diversion) B	20,784,455	6,984,455

Source: Future Urban Research

When these costs are offset with the savings gained by diverting waste from disposal and landfill, costs decline considerably. In this analysis, it is assumed that overall disposal costs approach \$100 per tonne. This represents \$60 per tonne in collection costs, which is determined from Durham Region's historical experience, and \$40 per tonne disposal costs. This latter amount is an empirically determined rate using waste management practices in Ontario and does not represent Metro's current \$90 per tonne amount charged to Durham. Since the Metro landfill arrangement will not exist when the selected diversion alternative is put in place, a rate that more closely approaches actual processing costs has been used. (This is tested in the sensitivity analysis shown below.) With this recognition of the treatment of disposal costs, net diversion system costs are also shown on Table 5.2.1. These range from \$2,008,381 million from both the direct cost/revenue neutral system and the existing system to \$10,434,455 million for a mixed waste/low diversion system.

The household cost of diversion can also be compared to the level of municipal taxation paid in Durham Region. Table 5.2.2 shows that diversion activities currently represent \$9.00 per household, or 1% of total municipal taxes of \$1,032.00 per household (excluding school taxes). To estimate the future effects of the diversion alternatives on a household basis, the analysis

includes household growth estimates for Durham. This is included to capture the future effect of an increasing tax base.

While household costs range between \$9.00 and \$33.00 for the various alternatives, the committed system (\$11.00), the direct cost/revenue neutral system (\$9.00) and the expanded Blue Box system (\$14.00) all represent about 1% of household taxes. Moreover, the direct cost/added revenue system (\$19.00 per household) and the mixed waste/high diversion system (\$23.00 per household) represent 2% of current average household taxes. The remaining systems, wet/dry and mixed waste/low diversion, both approach 3% of average household taxes.

To estimate the effect of the system, a cost per household guideline was utilized. Cost increases that ranged from 0% to 3% of household taxes were considered to have a low effect, while cost increases of 4% to 6% were considered to have a medium effect, and cost increases above 7% were considered to be high.

**Percent of Diversion Costs to
Household Municipal Taxes**

Table 5.2.2

System	Current Total Municipal Taxation Per Household	Cost of Diversion Per Household	Percent Increase in Household Taxation
Existing	1,032.00	\$9.00	1%
Committed	1,032.00	11.00	1%
Direct Cost (Revenue Neutral) A	1,032.00	9.00	1%
Direct Cost (Added Revenue) B	1,032.00	19.00	2%
Expanded Blue Box	1,032.00	14.00	1%
Wet/Dry	1,032.00	27.00	3%
Mixed Waste (Low Diversion) A	1,032.00	33.00	3%
Mixed Waste (High Diversion) B	1,032.00	23.00	2%

Source: Future Urban Research

5.2.2 Potential Impact on the Debt Burden of the Municipalities

The effects of the diversion commitment on the municipal capital programs is more significant than the tax impact. In this analysis, it is assumed that the full capital cost of future diversion commitments are annualized at 9% for a 10 year period. The effect of increasing the existing debt position in Durham Region due to each alternative is shown on Table 5.2.3. Since both mixed waste alternatives have the largest capital program, these systems significantly affect Durham Region's associated debt burden. Conversely, since the committed program, the direct cost and expanded Blue Box systems have the lower capital requirements, Durham Region's debt burden is affected the least in these alternatives.

Table 5.2.3

**Capital Costs Related to
the Diversion Alternatives**

System	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing	\$35,293	0	0%
Committed	35,293	3,856	11%
Direct Cost (Revenue Neutral) A	35,293	3,856	11%
Direct Cost (Added Revenue) B	35,293	3,856	11%
Expanded Blue Box	35,293	9,000	26%
Wet/Dry	35,293	39,500	112%
Mixed Waste (Low Diversion) A	35,293	50,000	142%
Mixed Waste (High Diversion) B	35,293	50,000	142%

Source: Future Urban Research

When examining Durham Region's existing debt charge position, that is, the comparison of debt payments (including principal and interest) to operating expenditures, debt charges represented 2.3% of costs. The future diversion alternatives have the effect of changing these ratios for all systems. With the committed and direct cost the percentage of debt charges to expenditures may increase to 2.4%, while the expanded Blue Box's ratio may increase to 2.6%. With the wet/dry and mixed waste systems, debt charges may increase to 3.6% and 3.9% respectively. This is shown in Table 5.2.4.

**Effect of Diversion Costs on
Municipal Debt Charges**

Table 5.2.4

System	Existing Debt Charges as a Percent of Expenditures	Future Debt Charges as a Percent of Expenditures
Existing	2.3%	2.3%
Committed	2.3%	2.4%
Direct Cost (Revenue Neutral) A	2.3%	2.4%
Direct Cost (Added Revenue) B	2.3%	2.4%
Expanded Blue Box	2.3%	2.6%
Wet/Dry	2.3%	3.6%
Mixed Waste (Low Diversion) A	2.3%	3.9%
Mixed Waste (High Diversion) B	2.3%	3.9%

Source: Future Urban Research

Similar to the ratio of debt charges to operating expenditures, debt capacity calculations determine the amount of available debt permitted by the Ministry of Municipal Affairs (former OMB guideline). When estimating debt capacity, using a 9% interest rate and a ten year term, the total debt capacity for Durham Region approached \$370 million (Table 6.2.5). Similar to the previous analysis, the low capital cost system alternatives have relatively minor effect in reducing the Region's debt capacity. When compared to the current 90% level of remaining capacity, the committed program (89%), the direct cost systems (89%) and expanded Blue Box (88%) do not absorb a significant amount of remaining debt capacity. The wet/dry system and the mixed waste systems, however, absorb large amounts of debt capacity, leaving Durham with 80% and 77% respectively.

Table 5.2.5

**Effect of Diversion Costs
on Debt Capacity**

System	Total Available Debt Capacity (\$000)	Current Remaining Debt Capacity (\$000)	Total Diversion Debt (\$000)	Percent Capacity Remaining
Existing	\$370,074	\$334,781	0	90%
Committed	370,074	334,781	3,856	89%
Direct Cost (Revenue Neutral) A	370,074	334,781	3,856	89%
Direct Cost (Added Revenue) B	370,074	334,781	3,856	89%
Expanded Blue Box	370,074	334,781	9,000	88%
Wet/Dry	370,074	334,781	39,500	80%
Mixed Waste (Low Diversion) A	370,074	334,781	50,000	77%
Mixed Waste (High Diversion) B	370,074	334,781	50,000	77%

Source: Future Urban Research

5.2.3 Potential Impact on Municipal Reserve Funds

It was shown under the system descriptions that the direct cost/added revenue system had the capacity of generating a further \$1.5 million in extra revenue that could have been placed into reserves and used for other waste management/waste diversion activities.

5.2.4 Potential Impact on the Level of Municipal Services

Similar to the evaluation of reserve funds, the annualized cost effect of the diversion systems has a relatively nominal impact on household taxation. Therefore, no reductions in the delivery of services for other municipal departments is necessary to fund diversion costs. Therefore, there would be no impact on the functional service levels in the municipalities.

5.2.5 Potential Impact on the Provincial Treasury

The above analysis is presented in the absence of mitigation. During the course of this study, it was found that reliance on this criteria had to be lessened. Due to budget and social contract considerations, the amount of grant funding beyond the current Provincial fiscal year is uncertain. In the extreme, the Province may find it necessary to address the funding assistance of each 3R's alternative examined in this study on a case-by-case basis. Due to this, evaluations under this criteria became indeterminate. Actual resolution may possibly depend on actual funding negotiations with each Region.

Notwithstanding this, and pending funding arrangements with Durham Region, it could be assumed that 30% of the capital costs of the alternative systems could be funded externally. While the primary source of funds may be Provincial grants, the analysis does not exclude the possibility of other private funding sources. If this were the case, the alternative systems in Durham may be funded as follows:

Existing	0
Committed	\$1.3 million
Direct Cost A	1.3 million
Direct Cost B	1.3 million
Expanded Blue Box	3.0 million
Wet/Dry	13.6 million
Mixed Waste A	17.7 million
Mixed Waste B	17.7 million

5.2.6 Potential Impact on Private Sector Industries

Assuming the continuation of existing municipal funding mechanisms, the effects analysis does not consider any direct impacts to the private sector to offset costs related to the diversion commitment (apart from a possible mitigation scenario shown as part of the Impact on the Provincial Treasury). However, there is an indirect taxation effect, whereby a portion of the diversion costs are levied in local taxes.

Table 5.2.6
System Effects on Business Taxes

System	Total Existing Business Taxes (\$000)	Total Added Taxes Due To Diversion (\$000)	Percent Increase
Existing	\$57,271	\$859	1%
Committed	57,271	1,070	2%
Direct Cost (Revenue Neutral) A	57,271	823	1%
Direct Cost (Added Revenue) B	57,271	2,260	1%
Expanded Blue Box	57,271	1,536	3%
Wet/Dry	57,271	3,381	6%
Mixed Waste (Low Diversion) A	57,271	4,278	7%
Mixed Waste (High Diversion) B	57,271	2,864	5%

Source: Future Urban Research

Table 5.2.6 shows the level of private sector taxation in Durham for each diversion system. While taxes currently collected from the business sector now approach \$57 million, tax charges for each system range from 1% for existing and direct cost systems (added revenue bag charges are only residually related) to 6% and 7% for wet/dry and mixed waste (low diversion) systems.

5.2.7 Summary of Effects Analysis

The following table summarizes the effects by criteria and indicator for Durham Region. The system alternatives were first ranked by the criteria and indicators within the Municipal Finance group. The net effects are summarized on Table 5.2.7. The criteria themselves are not ranked in terms of order of importance. All criteria maintain an equal weighting because no one criteria is viewed to carry more weight, or be of more significance than others. By considering the relative magnitude of the effects for each of the criteria and indicators, an overall systems ranking can be completed for Municipal Finance. This is also summarized on Table 5.2.7.

The highest ranked systems are the existing system and the direct cost systems. The existing system represents the least cost to the tax payers in Durham and does not present any debt costs. While the direct cost systems represent very different revenue strategies the ranking indicates the system's relative merits. On the one hand, the direct cost/revenue neutral system imposes a low cost per household and does not require a significant amount of capital costs. On the other hand, while the direct cost/added revenue system similarly does not represent a significant capital cost, it imposes an additional cost to the tax payers. This revenue, however, represents an addition to Durham Region's reserves. Therefore, these funds are then available to assist in further waste management financing for other needed projects. As such, these added funds would be returned to Durham's tax payers in the future. Since these added charges, however, are collected as a fee for waste management, it is suggested that the funds be used only for waste management purposes and not to decrease general levy requirements for other municipal services.

Following these highest ranked systems, the committed program and the expanded Blue Box systems are second and third highest ranked as the tax requirements and debt burdens do not represent significant effects.

The mixed waste/low diversion system is the lowest ranked system because it represents the highest tax effects and also carries the highest capital cost. Similarly, while less burdensome, the mixed waste/high diversion and the wet/dry systems also represent lower ranked systems.

Table 5.2.7

SYSTEM NET EFFECTS TABLE BY INDICATOR

DURHAM

	Existing	Committed	Direct Cost A	Direct Cost B	Expanded Blue Box	Wet/Dry	Mixed Waste a	Mixed Waste b
Overall Rank	1 4 Highest Ranked	1 Second Highest Ranked	1 Highest Ranked	1 Highest Ranked	6 Third Highest Ranked	8 Third Lowest Ranked	7 Lowest Ranked	7 Second Lowest Ranked
Impact on Local Taxpayers	1 3 1%	1 3 1%	1 3 1%	1 3 1%	1 3 1%	1 3 1%	1 3 1%	1 3 1%
Tax Levy	2,094,865	2,608,692	2,008,381	5,511,435	3,746,534	8,245,746	10,434,455	6,984,455
Tax Per Household	9 1%	11 1%	9 1%	19 2%	14 1%	27 3%	33 3%	23 2%
Impact on Municipal Debt Burden	1 2 0	1 2 0	1 2 0	1 2 0	1 2 0	1 2 0	1 2 0	1 2 0
Amount of Debt	0	3,656	3,656	3,656	9,000	39,500	50,000	50,000
Debt Payments	0	601	601	604	1,402	6,155	7,791	7,791
Debt Capacity	90	89	89	89	88	80	77	77
Impact on Municipal Reserves	8 0	8 0	8 0	8 0	8 0	8 0	8 0	8 0
Total Reserves	0	0	0	1,500,000	0	0	0	0
Reserves/Household	0	0	0	11	0	0	0	0
Reserves/Expenses	0	0	0	3%	0	0	0	0
Impact on Municipal Level of Service	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Operating Cost	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Expense/Household	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Impact on Provincial Treasury	pending funding arrangements	pending funding arrangements	pending funding arrangements	pending funding arrangements	pending funding arrangements	pending funding arrangements	pending funding arrangements	pending funding arrangements
Impact on Private Sector Industries	1 1	1 1	1 1	1 1	5 5	8 8	5 5	5 5
Private Funding	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Costs	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Higher Prices	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Private Taxes	1%	2%	1%	1%	3%	6%	7%	5%

5.2.8 SENSITIVITY ANALYSIS

To confirm this ranking, the municipal finance component also undertook a sensitivity analysis on the key variables that may affect the criteria and indicators. The sensitivity analysis examined variations in capital costs (plus or minus 10% and 20%), rates of waste diversion (plus or minus 5%), variations in operating cost (plus or minus 5% and 10%) differences in waste disposal costs per tonne including the rate the Metro currently charges Durham Region for solid waste disposal and, finally, household growth including a no growth scenario. While changing the value of the indicators shown above, the sensitivity analysis shows that, given the ranges tested, the general ranking of the systems shown above would not significantly change.

SENSITIVITY ANALYSIS
DURHAM

Table 5.2.8

	Existing	Committed	Direct Cost A	Direct Cost B	Expanded	Wet/Dry	Mixed a	Mixed b
Net Annual Costs	2,095	2,609	2,008	5,511	3,747	8,246	10,434	6,984
Capital Costs								
10%	2,095	2,669	2,068	5,571	3,887	8,861	11,214	7,764
20%	2,095	2,729	2,129	5,632	4,027	9,477	11,992	8,542
-10%	2,095	2,549	1,948	5,451	3,606	7,630	9,655	6,205
-20%	2,095	2,488	1,888	5,391	3,466	7,014	8,876	5,426
			no change in ranking					
Diversion Rate								
5% n/a	n/a		1,258	4,761	2,996	7,496	9,684	6,284
-5% n/a	n/a		2,758	6,261	4,496	8,996	11,184	7,734
			-5% favours direct cost A					
Operating Cost								
5%	2,095	2,864	2,418	5,442	4,236	8,802	11,053	7,603
10%	2,095	3,120	2,828	6,372	4,726	9,359	11,672	8,222
-5%	2,095	2,609	1,598	5,081	3,256	7,689	9,816	6,366
			more cost favours existing					
			less cost favours direct cost A					
Cost Per Tonne								
+ \$40	896	1,365	-871	2,631	566	4,406	6,294	1,464
20	1,495	1,987	568	4,071	2,156	6,326	8,364	4,224
			higher disposal fees favour direct cost a and mixed waste b					
Household Growth								
analysis	1%	1%	1%	2%	1%	3%	3%	2%
no growth	1%	2%	1%	3%	2%	4%	5%	3%
			no growth favours existing & direct cost a					

Source: Future Urban Research

5.3 METROPOLITAN TORONTO

While each of the system alternatives for Metropolitan Toronto have been previously described in the Environmental Assessment document prepared by M.M. Dillon Limited Consulting Engineers and Planners, there are specific cost and revenue elements associated with each of the diversion alternatives which are summarized from a financial perspective below.

- a) Existing System: As described in the previously presented baseline documentation and system descriptions, this system does not include additional costs or revenues beyond those that are already in place.
- b) Committed System: This system includes **new** capital or program items that would potentially change existing financing requirements. These are programs that have been identified as committed within the five year capital budgets. More specifically, the alternatives presented only include expenditures that could potentially increase the amount of tonnage diverted, therefore inflation increases to existing budget items have not been included.

In total, Metro Region is expected to incur \$69.9 million in capital expenditures over the next five years (1993 to 1997). The review of Metro's 1993 Capital and Operating Budgets and five year forecast for Waste Diversion indicated that an additional \$70.4 million will continue after 1997 and this brings the total committed program to \$140.3 million.

- c) Direct Cost: This system would charge for the amount of waste placed curbside. This suggests that Metro Region would have two options for charging for waste collection. Under a revenue neutral approach, no additional revenue would be charged for waste and diversion collection purposes from the home owners beyond what is now collected via municipal taxes. That is, added direct cost revenue would be netted from collection costs before household tax rates are determined.

Under an additional revenue direct cost system, garbage bag charges would be levied in addition to normal property taxes that include waste diversion and disposal collection costs. The extra revenue, while representing an added charge to the homeowner, would then be available to the Region to assist in financing other diversion and waste management activities. This analysis assumed that the added charges would yield approximately \$45.0 million per year to Metro Region. This approaches \$50 per household.

- d) Expanded Blue Box: The committed system in Metro would likely be able to handle

the expanded Blue Box, after the new MRF is constructed. The total program is therefore the same as the committed program.

- e) Wet/Dry: This system would include two additional capital costs to the costs identified in the committed system, these include:
- \$40.0 million to provide roll-out carts to 400,000 single family households and similar other households
 - \$22.2 million for 148 new trucks

The analysis assumed that half of the cost of the trucks and roll-out carts would be included in diversion budgets with the other half being debentured. This recognizes the fact that to establish a wet/dry system a staging strategy would be necessary. Therefore, the system would be phased over time and trucks would be replaced gradually as exiting vehicles wear out.

- f) Mixed Waste: This system would require an \$200.0 to \$250.0 million expenditure for a mixed waste plant (with capacity of 900,000 tonnes per year).

5.3.1 Potential Impact on Local Taxpayers

The following describes the net system effects on the local taxpayers. Table 5.3.1 indicates that, when all elements are considered, gross costs in Metro Region may range from the existing level of \$44.2 million per year to \$217.8 million per year for the mixed waste system. Further, while the committed expansion program may present a gross annual operating cost of \$67.0 million per year, the direct cost/neutral revenue system may approach \$107.1 million per year, with a direct cost/added revenue system approaching \$152.1 million in annual levy costs.

However, when these costs are offset with the savings gained by diverting waste from disposal and landfill, the costs decline. This analysis assumed that overall disposal costs approach \$100 per tonne. This represents \$60 per tonne in collection costs and \$40 per tonne in disposal costs. This latter amount is an empirically determined rate using waste management practices in Ontario and does not represent Metro's current \$90 per tonne amount charged at the landfill. Since the IWA may be in operation when the selected diversion alternative is put in place, a rate that more closely approaches actual processing costs has been used. (This is tested in the sensitivity analysis shown below.)

The household cost of diversion can also be compared to the level of municipal taxation paid in Metro Region. Table 5.3.2 shows that diversion activities currently represent \$13.00 per household, or 1% of total municipal taxes of \$1,016.00 per household per year (excluding school taxes). To estimate the future effects of the diversion alternatives on a household basis, the analysis included household growth estimates for Metro. This was included to capture the effect of an increasing tax base.

Table 5.3.1

Cost of Alternative Diversion Systems
Net Annual Diversion Costs -- General Levy

	Gross Costs	Net of Disposal Costs
Existing System	\$44,234,742	\$23,747,137
Committed Program	67,044,790	42,362,618
Direct Cost (Revenue Neutral) A	107,137,950	57,773,605
Direct Cost (Added Revenue) B	152,137,950	102,773,605
Expanded Blue Box	115,734,042	59,317,648
Wet / Dry	116,182,741	43,311,565
Mixed Waste (Low Diversion) A	213,293,159	138,071,300
Mixed Waste (High Diversion) B	217,188,661	116,109,288

Source: Future Urban Research

To estimate the effect of the system, a cost per household guideline was utilized. Cost increases that ranged from 0% to 3% of household taxes were considered to have a low effect, while cost increases of 4% to 6% were considered to have a medium effect, and cost increases above 7% were considered to be high.

While household costs range between \$13.00 and \$72.00 for the various alternatives, the existing system (\$13.00), the committed system (\$23.00), the direct cost/revenue neutral system (\$31.00), the expanded Blue Box system (\$31.00) all represent from 1% to 3% of household taxes and are the highest ranked. Further, the direct cost/added revenue system (54.00 per household), represents from 4% to 5% of current average household taxes. The mixed waste systems represent cost increases of above 5% and therefore are lowest ranked.

Table 5.3.2
Percent of Diversion Costs to
Household Municipal Taxes

	Current Total Municipal Taxation Per Household	Cost of Diversion Per Household	Percent Increase in Household Taxation
Existing	1,016.00	\$13.00	1%
Committed	1,016.00	23.00	2%
Direct Cost (Revenue Neutral) A	1,016.00	31.00	3%
Direct Cost (Added Revenue) B	1,016.00	54.00	5%
Expanded Blue Box	1,016.00	31.00	3%
Wet/Dry	1,016.00	23.00	2%
Mixed Waste (Low Diversion) A	1,016.00	72.00	7%
Mixed Waste (High Diversion) B	1,016.00	60.00	6%

Source: Future Urban Research

5.3.2 Potential Impact on the Debt Burden of the Municipalities

The impact of the diversion commitment on the municipal capital program was found to be more significant than the tax impact. This analysis assumed that the full capital cost of future diversion commitments would be annualized at 9% over a 10 year period. The effect of increasing the existing debt position in Metro Region on each alternative is shown on Table 5.3.3.

The wet/dry system and the mixed waste alternatives had the largest capital programs and the analysis used reserve funds to offset capital costs. Notwithstanding this, these systems significantly affect Metro Region's associated debt burden. Since the committed program, the direct cost and expanded Blue Box systems have lower capital requirements, Metro's debt burden is affected the least. Further, since the existing system does not require additional debt, it is the highest ranked system.

Table 5.3.3
**Capital Costs Related to
the Diversion Alternatives**

	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing	\$697,018	0	0%
Committed	697,018	135,681	19%
Direct Cost (Revenue Neutral) A	697,018	135,681	19%
Direct Cost (Added Revenue) B	697,018	135,681	19%
Expanded Blue Box	697,018	135,681	19%
Wet/Dry	697,018	166,781	24%
Mixed Waste (Low Diversion) A	697,018	240,984	35%
Mixed Waste (High Diversion) B	697,018	265,984	38%

Source: Future Urban Research

An examination of Metro Region's existing debt charge position, that is, the comparison of debt payments (including principal and interest) to operating expenditures, debt charges represented 4.3% of costs. The future diversion alternatives have the effect of changing these ratios for all systems. With the diversion commitment, as well as for the direct cost and expanded Blue Box systems, the ratio of debt charges to expenditures may increase to 4.7%. With the wet/dry system debt charges may increase to 4.8%. With the mixed waste/low diversion system at 5.1% and the mixed waste/high diversion system, debt charges may increase to 5.2%. This analysis is presented in Table 5.3.4.

Table 5.3.4

**Effect of Diversion Costs on
Municipal Debt Charges**

	Existing Debt Charges as a Percent of Expenditures	Future Debt Charges as a Percent of Expenditures
Existing	4.3%	4.3%
Committed	4.3%	4.7%
Direct Cost (Revenue Neutral) A	4.3%	4.7%
Direct Cost (Added Revenue) B	4.3%	4.7%
Expanded Blue Box	4.3%	4.7%
Wet/Dry	4.3%	4.8%
Mixed Waste (Low Diversion) A	4.3%	5.1%
Mixed Waste (High Diversion) B	4.3%	5.2%

Source: Future Urban Research

Debt capacity calculations (the ratio of debt charges to operating expenditures) determine the amount of available debt permitted by the Ministry of Municipal Affairs (former OMB guideline). When estimating debt capacity, a 9% interest rate and a ten year term was used, the total debt capacity for Metro Region approached \$3,519.3 million (Table 5.3.5). The capital costs for the committed, direct cost and expanded Blue Box systems each reduce the Region's debt capacity to 76.0% while wet/dry absorbs 75.0% of capacity. The mixed waste systems absorb the largest amount of debt capacity, leaving Metro with 73.0% of its debt capacity.

Table 5.3.5

**Effect of Diversion Costs
on Debt Capacity**

	Total Available Debt Capacity (\$000)	Current Remaining Debt Capacity (\$000)	Total Diversion Debt (\$000)	Percent Capacity Remaining
Existing	\$3,519,362	\$2,822,344	0	80%
Committed	\$3,519,362	2,822,344	135,681	76%
Direct Cost (Revenue Neutral) A	\$3,519,362	2,822,344	135,681	76%
Direct Cost (Added Revenue) B	\$3,519,362	2,822,344	135,681	76%
Expanded Blue Box	\$3,519,362	2,822,344	135,681	76%
Wet/Dry	\$3,519,362	2,822,344	166,781	75%
Mixed Waste (Low Diversion) A	\$3,519,362	2,822,344	240,984	73%
Mixed Waste (High Diversion) B	\$3,519,362	2,822,344	265,984	73%

Source: Future Urban Research

5.3.3 Potential Impact on Municipal Reserve Funds

As discussed in the debt burden analysis, the capital costs of the wet/dry system and the mixed waste systems are so large that reserve fund financing was used to offset some of the expenditure. This totalled \$25.0 million for the mixed waste/low diversion system and \$50.0 million for the mixed waste/high diversion system. While debt levels for the other systems are large and potentially subject to reserve contributions, the effect on taxes still remains relatively moderate without funding allocations. It was also shown under the system descriptions that the direct cost added revenue system had the capacity of generating a further \$45.0 million in extra revenue that could have been placed into reserves and used for other waste management/waste diversion activities.

As a result of this, the direct cost/added revenue system is the highest ranked because it adds to the Metro's reserve fund position. Conversely, the mixed waste/high diversion system is lowest ranked because it absorbs the highest amount of reserve funds. The remaining systems; the

existing, the committed, the direct cost/revenue neutral, the wet/dry and the expanded Blue Box systems do not impact on the reserve fund.

5.3.4 Potential Impact on the Level of Municipal Services

As indicated above, the annualized cost effect of the diversion systems have a low to medium impact on household taxation. Based on this, the analysis did not consider reductions in service in the other municipal departments to help fund diversion costs. As such, there would be no impact on the functional service levels in the municipalities.

5.3.5 Potential Impact on the Provincial Treasury

The analysis presented above was in the absence of mitigation. During the course of this study, it was found that reliance on this criteria had to be lessened. Due to budget and social contract considerations, the amount of grant funding beyond the current Provincial fiscal year is uncertain. In the extreme, the Province may find it necessary to address the funding assistance of each 3R's alternative examined in this study on a case-by-case basis. Due to this, evaluations under this criteria became indeterminate. Actual resolution may possibly depend on actual funding negotiations with each Region.

Notwithstanding this, and pending funding arrangements with Metro Region, it could be assumed that 30% of the capital costs of the alternative systems could be funded externally. While the primary source of funds may be Provincial grants, the assumption does not exclude the possibility of other private funding sources. If this were the case, the alternative systems in Peel may be funded as follows:

Existing	0
Committed	\$45.2 million
Direct Cost A	45.2 million
Direct Cost B	45.2 million
Expanded Blue Box	45.2 million
Wet/Dry	55.6 million
Mixed Waste A	88.3 million
Mixed Waste B	105.3 million

5.3.6 Potential Impact on Private Sector Industries

The effects analysis does not take into account direct impacts on the private sector to offset costs related to the diversion commitment (apart from a possible mitigation scenario shown as part of the Impact on the Provincial Treasury). It also assumes the continuation of existing municipal funding mechanisms. However, the private sector does get impacted taxation. That is, a portion of diversion costs are levied in local taxes.

Table 5.3.6 shows the level of private sector taxation in Metro for each diversion system. While taxes currently collected from the business sector now approach \$897 million, tax charges for each system range from 1% for existing and 2% for the committed and wet/dry, 3% for both direct cost systems (added revenue bag charges are only residually related) and the expanded Blue Box to 6% for the mixed waste/high diversion system and 7% for the mixed waste/low diversion system.

Table 5.3.6
System Effects on Business Taxes

	Total Existing Business Taxes ((\$000))	Total Added Taxes Due To Diversion ((\$000))	Percent Increase
Existing	\$896,869	\$12,349	1%
Committed	896,869	22,029	2%
Direct Cost (Revenue Neutral) A	896,869	30,042	3%
Direct Cost (Added Revenue) B	896,869	30,042	3%
Expanded Blue Box	896,869	30,845	3%
Wet/Dry	896,869	22,522	2%
Mixed Waste (Low Diversion) A	896,869	71,797	7%
Mixed Waste (High Diversion) B	896,869	60,377	6%

Source: Future Urban Research

As a result, the existing system is the highest ranked. The committed system, the direct cost systems, the expanded Blue Box system and the wet/dry system are second highest ranked.

Conversely, the mixed waste/low diversion system is lowest ranked and the mixed waste/high diversion system is second lowest ranked.

5.3.7 Summary of Effects Analysis

The following summarizes the above effects by criteria and indicator for Metropolitan Toronto and is presented on Table 5.3.7.

The existing system is the highest ranked system. The existing system would have the least cost impact on the tax payers in Metro and does not present significant debt costs to the financial structure. The committed system is second highest ranked. The direct cost systems and expanded Blue Box systems are the third highest ranked. While the direct cost systems represent very different revenue strategies the ranking indicates the systems relative merits. The direct cost/revenue neutral system imposes a low cost per household and does not require significant of capital costs, while the direct cost added revenue imposes a medium cost per household and it also adds to the reserve fund position. The expanded Blue Box shares the merits of the direct cost/revenue neutral system which imposes a low cost per household and it also does not require significant capital costs.

The mixed waste/low diversion system is the lowest ranked system because it carries with it the highest tax effects and also the highest capital cost. Similarly, while less burdensome, the mixed waste/high diversion system represents the second lowest ranked system based on its effect on the Region's debt capacity. The third lowest ranked system was the wet/dry system primarily as a result of it's impact on debt capacity and municipal reserves.

Table 5.3.7

SYSTEM NET EFFECTS TABLE BY INDICATOR

METROPOLITAN TORONTO

	Existing	Committed	Direct Cost A	Direct Cost B	Expanded Blue Box	Wet/Dry	Mixed Waste a	Mixed Waste b
	Highest Ranked	Second Highest Ranked	Third Highest Ranked	Third Highest Ranked	Third Highest Ranked	Third Lowest Ranked	Lowest Ranked	Second Lowest Ranked
Overall Rank	1	2	3	3	6	8	7	7
Impact on Local Taxpayers								
Tax Levy	23,747,137	42,362,618	57,773,605	102,773,605	59,317,648	43,311,566	138,071,300	116,109,389
Tax Per Household	13	23	31	54	31	23	72	60
	1%	2%	3%	5%	3%	2%	7%	6%
Impact on Municipal Debt Burden								
Amount of Debt	0	135,681,000	135,681,000	135,681,000	135,681,000	166,781,000	240,964,000	265,964,000
Debt Payments	0	21,142,000	21,142,000	21,142,000	21,142,000	25,988,000	37,550,000	41,446,000
Debt Capacity	80%	76%	76%	76%	76%	75%	73%	73%
Impact on Municipal Reserves								
Total Reserves	0	0	0	45,000,000	0	0	-25,000,000	-50,000,000
Reserves/Household	0	0	0	52	0	0	0	0
Reserves/Expenses	0	0	0	1%	0	0	0	0
Impact on Municipal Level of Service								
Operating Cost	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Expense/Household	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Impact on Provincial Treasury								
pending funding arrangements	1	1	1	1	1	8	7	7
Impact on Private Sector Industries								
Private Funding	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Costs	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Higher Prices	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Private Taxes	1%	2%	3%	3%	3%	2%	7%	6%

5.3.8 Sensitivity Analysis

To confirm the overall ranking, the municipal finance component also undertook a sensitivity analysis on key variables that may affect the criteria and indicators. The sensitivity analysis examined variations in capital costs (plus or minus 10% and 20%), rates of waste diversion (plus or minus 5%), variations in operating cost (plus or minus 5% and 10%) differences in waste disposal costs per tonne including the rate the Metro currently charges Durham Region for solid waste disposal and, finally, household growth which includes a no growth scenario. While utilizing the various ranges of indicators presented above, the sensitivity analysis showed that, the general ranking of the systems presented above would not materially change.

Table 6.3.8

**SENSITIVITY ANALYSIS
METRO**

	Existing	Committed	Direct Cost A	Direct Cost B	Expanded	Wet/Dry	Mixed a	Mixed b
Net Annual Costs	23,747	42,363	57,774	102,774	59,318	43,312	138,071	116,109
Capital Costs								
10%	23,747	43,477	59,888	104,888	61,432	45,910	142,216	121,033
20%	23,747	46,591	62,002	107,002	63,546	48,509	146,360	125,957
-10%	23,747	40,248	55,659	100,659	57,203	40,713	133,927	111,186
-20%	23,747	38,134	53,545	98,545	55,089	38,134	129,782	106,262
			no change in ranking					
Diversion Rate								
5% n/a		36,485	51,897	96,897	53,441	37,435	132,195	110,233
-5% n/a		48,239	63,650	108,650	65,194	49,188	143,948	121,986
			no change in ranking					
Operating Cost								
5%	23,747	44,658	62,073	107,073	64,047	47,821	146,858	124,896
10%	23,747	46,953	66,373	111,373	68,777	52,331	155,646	133,684
-5%	23,747	40,067	53,474	98,474	54,588	38,802	129,284	107,322
			more cost favours existing					
			less cost favours wet/dry					
Cost Per Tonne								
+ \$40	15,552	32,490	38,028	83,028	36,751	14,163	107,983	75,678
20	19,650	37,426	47,901	92,901	48,034	28,737	123,027	95,893
			higher disposal fees favour wet/dry					
Household Growth								
analysis	1%	2%	3%	5%	3%	2%	7%	6%
no growth	1%	2%	3%	6%	3%	2%	8%	6%
			no change in ranking					

Source: Future Urban Research

5.4 REGION OF YORK

While each of the system alternatives for York Region have been described in the Environmental Assessment document prepared by M.M. Dillon Limited Consulting Engineers and Planners, there are specific cost and revenue elements associated with each of the diversion alternatives which are summarized from a financial perspective below.

- a) Existing System: As described in the previously presented baseline documentation and system descriptions, this system does not include additional costs or revenues beyond those that are already in place.
- b) Committed System: This system includes new capital or program items that would potentially change existing financing requirements. These are programs that have been identified as committed within the five year capital budgets. More specifically, the alternatives presented only include expenditures that could potentially increase the amount of tonnage diverted, therefore inflation increases to existing budget items have not been included. In total, York Region is expected to incur approximately \$2.8 million in capital expenditures over the next five years.
- c) Direct Cost: This system would charge for the amount of waste placed curbside. This suggests that York Region would have two options for charging for waste collection. Under a revenue neutral approach, no additional revenue would be charged for waste and diversion collection purposes from the home owners beyond what is now collected via municipal taxes. That is, added direct cost revenue would be netted from collection costs before household tax rates are determined.

Under an additional revenue direct cost system, garbage bag charges would be levied in addition to normal property taxes that include waste diversion and disposal collection costs. The extra revenue, while representing an added charge to the homeowner, would then be available to the Region to assist in financing other diversion and waste management activities. This analysis assumed that the added charges would yield approximately \$6.5 million per year to York Region. This approaches \$50 per household.

- d) Expanded Blue Box: The committed system in York would likely be able to handle the expanded Blue Box system. Depending on capacity of the new MRF, however, a further MRF may be needed in the more distant future. The total capital program is therefore the same as York Region's committed program,

except that a further \$10 million provision has been made for an additional new MRF in the future.

- e) Wet/Dry: This system would include two additional capital costs to the costs identified in the committed system, these include:

- \$13.0 million to provide roll-out carts to 130,000 single family households and similar other households
- \$7.1 million for 47 new trucks

The analysis assumed that half of the cost of the trucks and roll-out carts would be included in diversion budgets with the other half being debentured. This recognizes the fact that to establish a wet/dry system a staging strategy would be necessary. Therefore, the system would be phased over time and trucks would be replaced gradually as exiting vehicles wear out.

- f) Mixed Waste: This system would require a \$57.7 million expenditure for a mixed waste plant (with capacity of 125,000 tonnes per year -- 480 tonnes per day).

5.4.1 Potential Impact on Local Taxpayers

The following describes the net system effects on the local taxpayers. Table 5.4.1 indicates that, when all elements are considered, gross costs in York Region may range from the existing level of \$7.7 million per year to \$37.6 million per year for the mixed waste system. Further, while the committed expansion program may present a gross annual operating cost of \$8.2 million per year, the direct cost/neutral revenue system may approach \$12.5 million per year, with a direct cost/added revenue system approaching \$19.0 million in annual levy costs.

However, when these costs are offset with the savings gained by diverting waste from disposal and landfill, the costs decline. This analysis assumed that overall disposal costs approach \$100 per tonne. This represents \$60 per tonne in collection costs and \$40 per tonne in disposal costs, which has been determined from York Region's historical experience. This latter amount is an empirically determined rate using waste management practices in Ontario and does not represent York's current \$90 per tonne amount charged at the landfill. Since the IWA may be in operation when the selected diversion alternative is put in place, a rate that more closely approaches actual processing costs has been used. (This is tested in the sensitivity analysis shown below.). This analysis and treatment of disposal costs is also shown on Table 5.4.1. These range from \$2.2 million for the existing system to \$23.5 million for a mixed waste/low diversion system.

Table 5.4.1

Cost of Alternative Diversion Systems
Net Annual Diversion Costs -- General Levy

	Gross Costs	Net of Disposal Costs
Existing System	\$7,770,701	\$2,226,701
Committed Program	8,204,676	2,660,676
Direct Cost (Revenue Neutral) A	12,514,682	2,614,682
Direct Cost (Added Revenue) B	19,014,682	9,114,682
Expanded Blue Box	15,499,676	4,411,676
Wet / Dry	28,879,088	16,009,088
Mixed Waste (Low Diversion) A	37,656,462	23,598,462
Mixed Waste (High Diversion) B	37,656,462	20,034,462

Source: Future Urban Research

The household cost of diversion can also be compared to the level of municipal taxation paid in York Region. Table 5.4.2 shows that diversion activities currently represent \$10.00 per household, or 1% of total municipal taxes of \$1,040.00 per household per year (excluding school taxes). To estimate the future effects of the diversion alternatives on a household basis, the analysis included household growth estimates for York. This was included to capture the effect of an increasing tax base.

To estimate the effect of the system, a cost per household guideline was utilized. Cost increases that ranged from 0% to 3% of household taxes were considered to have a low effect, while cost increases of 4% to 6% were considered to have a medium effect, and cost increases above 7% were considered to be high.

While household costs range between \$10.00 and \$77.00 for the various alternatives, the existing system (\$10.00), the committed system (\$12.00), the direct cost/revenue neutral and added revenue systems (\$12.00 and \$32.00 respectively) and the expanded Blue Box system (\$17.00) all represent from 1% to 3% of household taxes. Further, the wet/dry system (\$53.00) represents from 4% to 5% of current average household taxes while the mixed waste systems represent cost increases of above 5% and therefore are ranked lowest.

**Percent of Diversion Costs to
Household Municipal Taxes**

Table 5.4.2

	Current Total Municipal Taxation Per Household	Cost of Diversion Per Household	Percent Increase in Household Taxation
Existing	1,040.00	\$10.00	1%
Committed	1,040.00	12.00	1%
Direct Cost (Revenue Neutral) A	1,040.00	12.00	1%
Direct Cost (Added Revenue) B	1,040.00	32.00	3%
Expanded Blue Box	1,040.00	17.00	2%
Wet/Dry	1,040.00	53.00	5%
Mixed Waste (Low Diversion) A	1,040.00	77.00	7%
Mixed Waste (High Diversion) B	1,040.00	66.00	6%

Source: Future Urban Research

5.4.2 Potential Impact on the Debt Burden of the Municipalities

The impact of the diversion commitment on the municipal capital program was found to be more significant than the tax impact. This analysis assumed that the full capital cost of future diversion commitments would be annualized at 9% over a 10 year period. The effect of increasing the existing debt position in York Region on each alternative is shown on Table 5.4.3.

Since the existing system does not require additional debt it is the lowest capital cost system and therefore is highest ranked. The committed and direct cost systems have low capital requirements, and York's debt burden is nomially affected, these systems are second highest. The expanded Blue Box system is the third highest ranked system. The wet/dry and mixed waste systems have the largest capital programs and affect the Region's debt burden the most and, therefore, are the lowest ranked systems.

Table 5.4.3

**Capital Costs Related to
the Diversion Alternatives**

	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing	\$39,212	0	0%
Committed	39,212	2,785	7%
Direct Cost (Revenue Neutral) A	39,212	2,785	7%
Direct Cost (Added Revenue) B	39,212	2,785	7%
Expanded Blue Box	39,212	10,000	26%
Wet/Dry	39,212	45,000	115%
Mixed Waste (Low Diversion) A	39,212	57,785	147%
Mixed Waste (High Diversion) B	39,212	57,785	147%

Source: Future Urban Research

An examination of York Region's existing debt charge position, that is, the comparison of debt payments (including principal and interest) to operating expenditures, debt charges represented 2.1% of costs. The future diversion alternatives have the effect of changing these ratios for all systems. With the diversion commitment, as well as for the direct cost systems, the ratio of debt charges to expenditures may increase to 2.2%. With the expanded Blue Box system debt charges may increase to 2.5%. With the wet/dry system at 3.7% and the mixed waste systems, debt charges may increase to 4.2%. This analysis is presented in Table 5.4.4.

**Effect of Diversion Costs on
Municipal Debt Charges**

Table 5.4.4

	Existing Debt Charges as a Percent of Expenditures	Future Debt Charges as a Percent of Expenditures
Existing	2.1%	2.1%
Committed	2.1%	2.2%
Direct Cost (Revenue Neutral) A	2.1%	2.2%
Direct Cost (Added Revenue) B	2.1%	2.2%
Expanded Blue Box	2.1%	2.5%
Wet/Dry	2.1%	3.7%
Mixed Waste (Low Diversion) A	2.1%	4.2%
Mixed Waste (High Diversion) B	2.1%	4.2%

Source: Future Urban Research

Debt capacity calculations (the ratio of debt charges to operating expenditures) determines the amount of available debt permitted by the Ministry of Municipal Affairs (former OMB guideline). When estimating debt capacity (a 9% interest rate and a ten year term was used), the total debt capacity for York Region approached \$340.7 million (Table 5.4.5). The capital costs for the mixed waste systems reduce the Region's debt capacity to 72.0%, while wet/dry reduces capacity to 75.0%. These are the lowest ranked systems. The existing, committed and direct cost systems absorb the least amount of debt, leaving York with 88.0% and were the highest ranked systems. The expanded Blue Box is the third highest ranked system reducing the debt capacity to 86.0%.

Table 5.4.5

**Effect of Diversion Costs
on Debt Capacity**

	Total Available Debt Capacity (\$000)	Current Remaining Debt Capacity (\$000)	Total Diversion Debt (\$000)	Percent Capacity Remaining
Existing	\$340,768	\$301,556	0	88%
Committed	340,768	301,556	2,785	88%
Direct Cost (Revenue Neutral) A	340,768	301,556	2,785	88%
Direct Cost (Added Revenue) B	340,768	301,556	2,785	88%
Expanded Blue Box	340,768	301,556	10,000	86%
Wet/Dry	340,768	301,556	45,000	75%
Mixed Waste (Low Diversion) A	340,768	301,556	57,785	72%
Mixed Waste (High Diversion) B	340,768	301,556	57,785	72%

Source: Future Urban Research

5.4.3 Potential Impact on Municipal Reserve Funds

Under the system descriptions, the direct cost added revenue system had the capacity of generating a further \$6.5 million in extra revenue that could have been placed into reserves and used for other waste management/waste diversion activities.

As a result of this, the direct cost/added revenue system is the highest ranked since it adds to the Region's reserve fund position. Conversely, the remaining systems including: the existing, the committed, the direct cost/revenue neutral, the wet/dry, mixed waste and the expanded Blue Box are the lowest ranked even though they do not affect the reserve fund.

5.4.4 Potential Impact on the Level of Municipal Services

As indicated above, the annualized cost effect of the diversion systems have a low to medium impact on household taxation. Based on this, there was no reason to assume reductions in

service in the other municipal departments to help fund diversion costs. As such, there would be no impact on the functional service levels in the municipalities.

5.4.5 Potential Impact on the Provincial Treasury

The analysis presented above was in the absence of mitigation. During the course of this study, it was found that reliance on this criteria had to be lessened. Due to budget and social contract considerations, the amount of grant funding beyond the current Provincial fiscal year is uncertain. In the extreme, the Province may find it necessary to address the funding assistance of each 3R's alternative examined in this study on a case-by-case basis. Due to this, evaluations under this criteria became indeterminate. Actual resolution may possibly depend on actual funding negotiations with each Region.

Notwithstanding this, and pending funding arrangements with York Region, it could be assumed that 30% of the capital costs of the alternative systems could be funded externally. While the primary source of funds may be Provincial grants, the analysis does not exclude the possibility of other private funding sources. If this were the case, the alternative systems in York may be funded as follows:

Existing	0
Committed	\$835,500
Direct Cost A	\$835,500
Direct Cost B	\$835,500
Expanded Blue Box	3.0 million
Wet/Dry	13.5 million
Mixed Waste A	17.3 million
Mixed Waste B	17.3 million

5.4.6 Potential Impact on Private Sector Industries

The effects analysis does not take into account direct impacts on the private sector to offset costs related to the diversion commitment (apart from a possible mitigation scenario shown as part of the Impact on the Provincial Treasury). It also assumes the continuation of existing municipal funding mechanisms. However, the private sector does get an indirect taxation effect, whereby a portion of the diversion costs are levied in local taxes.

Table 5.4.6 shows the level of private sector taxation in York for each diversion system. While taxes currently collected from the business sector now approach \$61.3 million, tax charges for each system range from 1% for existing, committed and direct cost systems and 2% for the

expanded Blue Box, 7% for wet/dry and 9% for the mixed waste/high diversion system and 11% for the mixed waste/low diversion system.

Table 5.4.6
System Effects on Business Taxes

	Total Existing Business Taxes (\$000)	Total Added Taxes Due To Diversion (\$000)	Percent Increase
Existing	\$61,333	\$668	1%
Committed	61,333	798	1%
Direct Cost (Revenue Neutral) A	61,333	784	1%
Direct Cost (Added Revenue) B	61,333	784	1%
Expanded Blue Box	61,333	1,324	2%
Wet/Dry	61,333	4,803	7%
Mixed Waste (Low Diversion) A	61,333	7,080	11%
Mixed Waste (High Diversion) B	61,333	6,010	9%

Source: Future Urban Research

5.4.7 Summary of Effects Analysis

The following summarizes the above effects by criteria and indicator for York Region. The system alternatives were first ranked by the criteria and indicators by the Municipal Finance group. The net effects are summarized on Table 5.4.7. The criteria themselves are not ranked in terms of order of importance, therefore all criteria maintain an equal weighting and no one criteria is viewed to carry more weight, or be of more significance than others. By considering the relative magnitude of the effects for each of the criteria and indicators, an overall systems ranking can be completed for Municipal Finance. This is also summarized on Table 5.4.7.

The highest ranked system is the existing system. The existing system would have the least cost impact on the tax payers in York and does not present significant debt costs to the financial structure. The committed and direct cost/revenue neutral systems are the second highest ranked

systems. They impose a low cost per household and do not require significant capital costs. The expanded Blue Box and the direct cost/revenue added systems are the third highest ranked systems.

The mixed waste systems are the lowest ranked because they carry the highest tax effects and the highest capital costs. The second lowest ranked system was the wet/dry system because of its impact on debt capacity and municipal reserves.

Table 6.4.7

SYSTEM NET EFFECTS TABLE BY INDICATOR

YORK

	Existing	Committed	Direct Cost A	Direct Cost B	Expanded Blue Box	Wet/Dry	Mixed Waste a	Mixed Waste b
Overall Rank	1 Highest Ranked	2 Second Highest Ranked	3 Third Highest Ranked	4 Fourth Highest Ranked	5 Fifth Highest Ranked	6 Sixth Highest Ranked	7 Seventh Highest Ranked	8 Eighth Highest Ranked
Impact on Local Taxpayers								
Tax Levy	2,226,701	2,650,076	2,614,692	9,114,692	4,411,676	18,009,088	23,598,462	20,034,462
Tax Per Household	10	12	12	32	17	53	77	66
	1%	1%	1%	3%	2%	5%	7%	6%
Impact on Municipal Debt Burden								
Amount of Debt	0	2,785,000	2,785,000	2,785,000	10,000,000	45,000,000	57,785,000	57,785,000
Debt Payments	0	434,000	434,000	434,000	1,558,000	7,012,000	9,004,000	9,004,000
Debt Capacity	88%	88%	88%	88%	88%	75%	72%	72%
Impact on Municipal Reserves								
Total Reserves	0	0	0	6,500,000	0	0	0	0
Reserves/Household	0	0	0	43	0	0	0	0
Reserves/Expenses	0	0	0	1%	0	0	0	0
Impact on Municipal Level of Service								
Operating Cost	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Expense/Household	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Impact on Provincial Treasury								
pending funding arrangements	1	1	1	1	1	1	1	1
Impact on Private Sector Industries								
Private Funding	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Costs	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Higher Prices	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Private Taxes	1%	1%	1%	1%	2%	7%	11%	9%

5.4.8 Sensitivity Analysis

To confirm the overall ranking, the municipal finance component also undertook a sensitivity analysis on key variables that may affect the criteria indicators. The sensitivity analysis examined variations in capital costs (plus or minus 10% and 20%), rates of waste diversion (plus or minus 5%), variations in operating cost (plus or minus 5% and 10%) differences in waste disposal costs per tonne for solid waste disposal and, finally, household growth which includes a no growth scenario. While utilizing the various ranges of indicators presented above, the sensitivity analysis showed that, the general ranking of the systems presented above would not materially change.

Table 6.4.8

**SENSITIVITY ANALYSIS
YORK**

	Existing	Committed	Direct Cost A	Direct Cost B	Expanded	Wet/Dry	Mixed a	Mixed b
Net Annual Costs	2,226	2,661	2,614	9,115	4,411	16,009	23,598	20,034
Capital Costs								
10%	2,226	2,704	2,658	9,158	4,567	16,710	24,499	20,935
20%	2,226	2,747	2,701	9,201	4,723	17,411	25,399	21,835
-10%	2,226	2,617	2,571	9,071	4,256	15,308	22,698	19,134
-20%	2,226	2,573	2,528	9,028	4,100	14,607	21,798	18,233
			no change in ranking					
Diversion Rate								
5% n/a	n/a		1,624	8,125	3,422	15,019	22,608	19,044
-5% n/a	n/a		3,605	10,105	5,402	16,999	24,588	21,024
			-5% favours direct cost a					
Operating Cost								
5%	2,226	3,048	3,218	9,719	5,108	17,102	25,031	21,467
10%	2,226	3,435	3,823	10,323	5,806	18,196	26,437	22,900
-5%	2,226	2,274	2,011	8,511	3,715	14,916	22,165	18,602
			no change in ranking					
Cost Per Tonne								
+ \$40	9	443	-1,345	5,155	-24	10,861	17,975	12,986
20	1,118	1,552	635	7,135	2,194	13,435	20,787	16,510
			higher disposal fees favour direct cost a and expanded blue box					
Household Growth								
analysis	1%	1%	1%	3%	2%	5%	7%	6%
no growth	1%	2%	2%	5%	2%	8%	11%	9%
			no change in ranking					

Source: Future Urban Research

5.5 REGION OF PEEL

While each of the system alternatives for the Region of Peel have been previously described in the Environmental Assessment document prepared by M.M. Dillon Limited Consulting Engineers and Planners, there are specific cost and revenue elements associated with each of the diversion alternatives which are summarized from a financial perspective below.

- a) Existing System: As described in the previously presented baseline documentation and system descriptions, this system does not include additional costs or revenues beyond those that are already in place.
- b) Committed System: This system includes new capital or program items that would potentially change existing financing requirements. These are programs that have been identified as committed within the five year capital budgets. More specifically, the alternatives presented only include expenditures that could potentially increase the amount of tonnage diverted, therefore inflation increases to existing budget items have not been included. In total, Peel Region is expected to incur \$90.3 million in capital expenditures over the next five years.
- c) Direct Cost: This system would charge for the amount of waste placed curbside. This suggests that Peel Region would have two options for charging for waste collection. Under a revenue neutral approach, no additional revenue would be charged for waste and diversion collection purposes from the home owners beyond what is now collected via municipal taxes. That is, added direct cost revenue would be netted from collection costs before household tax rates are determined.

Under an additional revenue direct cost system, garbage bag charges would be levied in addition to normal property taxes that include waste diversion, and disposal collection costs. The extra revenue, while representing an added charge to the homeowner, would then be available to the Region to assist in financing other diversion and waste management activities. This analysis assumed that the added charges would yield approximately \$10.0 million per year to Peel Region. This approaches \$50 per household.
- d) Expanded Blue Box: The committed system in Peel would likely be able to handle the expanded Blue Box, after the new MRF is constructed. The total program is therefore the same as the committed program.
- e) Wet/Dry: This system would include two additional capital costs to the costs identified in the committed system, these include:

- \$12.0 million to provide roll-out carts to 120,000 single family households
- \$9.0 million for 56 new trucks

The analysis assumed that half of the cost of the trucks and roll-out carts would be included in diversion budgets with the other half being debentured. This recognizes the fact that to establish a wet/dry system a staging strategy would be necessary. Therefore, the system would be phased over time and trucks would be replaced gradually as exiting vehicles wear out.

- f) Mixed Waste: This system would require an \$80.0 to \$100 million expenditure for a mixed waste plant (with capacity of 230,000 tonnes per year). If this system were adopted, it would eliminate the need for the construction of the central composting facility (estimated cost \$38.5 million) outlined in the committed system. The cost of this system therefore would be \$25.0 million for a new MRF, \$25.0 million for 7 recycling centres and \$80.0 to \$100 million for a mixed waste processing plant. To offset these costs, reserve allocations of \$40 million and \$45 million have been allotted from Peel's reserve funds for the mixed waste A (low diversion) and mixed waste B (high diversion) systems respectively.

5.5.1 Potential Impact on Local Taxpayers

The following describes the net system effects on the local taxpayers. Table 5.5.1 indicates that, when all elements are considered, gross costs in Peel Region may range from the existing level of \$8.6 million per year to \$58.4 million per year for the mixed waste system. Further, while the committed expansion program may present a gross annual operating cost of \$24.3 million per year, the direct cost/neutral revenue system may approach \$32.6 million per year, with a direct cost/added revenue system approaching \$42.6 million in annual levy costs.

However, when these costs are offset with the savings gained by diverting waste from disposal and landfill, the costs decline. This analysis assumed that overall disposal costs approach \$100 per tonne. This represents \$60 per tonne in collection costs and \$40 per tonne in disposal costs. This latter amount is an empirically determined rate using waste management practices in Ontario and does not represent Peel's current \$80 per tonne charged at its landfill. Since the IWA may be in operation when the selected diversion alternative is put in place, a rate that more closely approaches actual processing costs has been used. (This is tested in the sensitivity analysis shown below.). This analysis and treatment of disposal costs is also shown on Table 5.5.1. These range from \$3.5 million for the existing system to \$29.1 million for a mixed waste/low diversion system.

The household cost of diversion can also be compared to the level of municipal taxation paid in

Peel Region. Table 5.5.2 shows that diversion activities currently represent \$8.00 per household, or 1% of total municipal taxes of \$943.00 per household per year (excluding school taxes). To estimate the future effects of the diversion alternatives on a household basis, the analysis included household growth estimates for Peel. This was included to capture the effect of an increasing tax base.

Table 5.5.1
Cost of Alternative Diversion Systems
Net Annual Diversion Costs -- General Levy

	Gross Costs	Net of Disposal Costs
Existing System	\$8,648,000	\$3,568,000
Committed Program	24,343,800	16,723,800
Direct Cost (Revenue Neutral) A	32,610,000	18,589,200
Direct Cost (Added Revenue) B	42,610,000	28,589,200
Expanded Blue Box	33,447,400	18,817,000
Wet / Dry	39,318,700	17,943,800
Mixed Waste (Low Diversion) A	55,322,100	29,128,300
Mixed Waste (High Diversion) B	58,438,500	24,299,400

Source: Future Urban Research

To estimate the effect of the system, a cost per household guideline was utilized. Cost increases that ranged from 0% to 3% of household taxes were considered to have a low effect, while cost increases of 4% to 6% were considered to have a medium effect, and cost increases above 7% were considered to be high.

While household costs range between \$8.00 and \$47.00 for the various alternatives, the existing system, the committed system (\$28.00), the wet/dry (\$30.00), the direct cost/revenue neutral system (\$31.00), the expanded Blue Box system (\$31.00) all represent from 1% to 3% of household taxes and are the highest ranked systems. Further, the direct cost/added revenue system (\$46.00 per household), the mixed waste/low diversion system (\$47.00 per household) and the mixed waste/high diversion system (\$44.00) represent from 4% to 5% of current average household taxes and therefore are the lowest ranked systems.

Table 5.5.2

**Percent of Diversion Costs to
Household Municipal Taxes**

	Current Total Municipal Taxation Per Household	Cost of Diversion Per Household	Percent Increase in Household Taxation
Existing	943.00	\$8.00	1%
Committed	943.00	28.00	3%
Direct Cost (Revenue Neutral) A	943.00	31.00	3%
Direct Cost (Added Revenue) B	943.00	46.00	5%
Expanded Blue Box	943.00	31.00	3%
Wet/Dry	943.00	30.00	3%
Mixed Waste (Low Diversion) A	943.00	47.00	5%
Mixed Waste (High Diversion) B	943.00	44.00	4%

Source: Future Urban Research

5.5.2 Potential Impact on the Debt Burden of the Municipalities

The effects of the diversion commitment on the municipal capital programs was found to be more significant than the tax impact. This analysis assumed that the full capital cost of future diversion commitments would be annualized at 9% for a 10 year period. The effect of increasing the existing debt position in Peel Region due on each alternative is shown on Table 5.5.3. For the wet/dry system and the mixed waste alternatives, having the largest capital programs, reserve funds were used to offset capital costs. Notwithstanding this, these systems significantly affect Peel Region's associated debt burden. Conversely, since the committed program, the direct cost and expanded Blue Box systems have lower capital requirements, Peel's debt burden is affected the least in these alternatives. Further, since the existing system does not require additional debt, it is the lowest capital cost system.

Table 5.5.3
Capital Costs Related to
the Diversion Alternatives

	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing	\$107,800	0	0%
Committed	107,800	90,300	84%
Direct Cost (Revenue Neutral) A	107,800	90,300	84%
Direct Cost (Added Revenue) B	107,800	90,300	84%
Expanded Blue Box	107,800	90,300	84%
Wet/Dry	107,800	90,300	84%
Mixed Waste (Low Diversion) A	107,800	91,000*	84%
Mixed Waste (High Diversion) B	107,800	105,000**	97%

* includes \$40 million reserve funding

** includes \$45 million reserve funding

Source: Future Urban Research

An examination of Peel Region's existing debt charge position, that is, the comparison of debt payments (including principal and interest) to operating expenditures, debt charges represented 5.2% of costs. The future diversion alternatives have the effect of changing these ratios for all systems. With the diversion commitment, as well as for the direct cost and expanded Blue Box systems, wet/dry system and the mixed waste/low diversion the ratio of debt charges to expenditures may increase to 7.0%. With the mixed waste/high diversion system, debt charges may increase to 7.3%. This is shown in Table 5.5.4.

Table 5.5.4

**Effect of Diversion Costs on
Municipal Debt Charges**

	Existing Debt Charges as a Percent of Expenditures	Future Debt Charges as a Percent of Expenditures
Existing	5.2%	5.2%
Committed	5.2%	7.0%
Direct Cost (Revenue Neutral) A	5.2%	7.0%
Direct Cost (Added Revenue) B	5.2%	7.0%
Expanded Blue Box	5.2%	7.0%
Wet/Dry	5.2%	7.0%
Mixed Waste (Low Diversion) A	5.2%	7.0%
Mixed Waste (High Diversion) B	5.2%	7.3%

Source: Future Urban Research

Debt capacity calculations (the ratio of debt charges to operating expenditures) determine the amount of available debt permitted by the Ministry of Municipal Affairs (former OMB guideline). When estimating debt capacity, using a 9% interest rate and a ten year term, the total debt capacity for Peel Region approaches \$58.7 million (Table 5.5.5). Similar to the previous analysis, the capital costs for each reduce the Region's debt capacity to 66%. The mixed waste/high diversion system, however, absorbs the largest amount of debt capacity, leaving Peel with 64% of its debt capacity.

On an overall basis, when all of the debt factors are taken together, the existing system represents the highest ranked system as it carries no further capital costs. On the other hand, the mixed waste/high diversion system is the lowest ranked system since it incurs the highest capital cost. All other systems are second lowest ranked because they carry high capital costs but affect Peel's financing to a lesser extent.

Table 5.5.5
Effect of Diversion Costs
on Debt Capacity

	Total Available Debt Capacity (\$000)	Current Remaining Debt Capacity (\$000)	Total Diversion Debt (\$000)	Percent Capacity Remaining
Existing	\$586,750	\$478,900	0	82%
Committed	586,750	478,900	90,300	66%
Direct Cost (Revenue Neutral) A	586,750	478,900	90,300	66%
Direct Cost (Added Revenue) B	586,750	478,900	90,300	66%
Expanded Blue Box	586,750	478,900	90,300	66%
Wet/Dry	586,750	478,900	90,300	66%
Mixed Waste (Low Diversion) A	586,750	478,900	91,000*	66%
Mixed Waste (High Diversion) B	586,750	478,900	105,000**	64%

* includes \$40 million reserve funding

** includes \$45 million reserve funding

Source: Future Urban Research

5.5.3 Potential Impact on Municipal Reserve Funds

As indicated in the debt section, the capital costs of the wet/dry system and both mixed waste systems are so large that reserve fund financing was used to offset some of the expenditure. This totalled \$10.0 million for the wet dry, \$39.0 million for the mixed waste/low diversion system and \$45.0 million for the mixed waste/high diversion system. While debt levels for the other systems are large and potentially subject to reserve contributions, the effect on taxes still remains relatively moderate without funding allocations. It was also shown under the system descriptions that the direct cost added revenue system had the capacity of generating a further \$10.0 million in extra revenue that could have been placed into reserves and used for other waste management/waste diversion activities.

As a result of this, the direct cost/added revenue system is the highest ranked since it adds to the Region's reserve fund position. Conversely, the mixed waste/high diversion system is the

lowest ranked because it absorbs the highest amount of reserve funds. Similarly, the mixed waste/low diversion system is second lowest ranked system and the wet/dry system is the third lowest. The remaining systems: the existing, the committed, the direct cost/revenue neutral and the expanded Blue Box systems are the second highest ranked systems because they do not impact the reserve fund.

5.5.4 Potential Impact on the Level of Municipal Services

As indicated above, the annualized cost effect of the diversion systems have a low to medium impact on household taxation. Therefore, the analysis did not consider reductions in the delivery of service for other municipal departments to help fund diversion costs. Therefore, there would be no impact on functional service levels in the municipalities.

5.5.5 Potential Impact on the Provincial Treasury

The above analysis is presented in the absence of mitigation. During the course of this study, it was found that reliance on this criteria had to be lessened. Due to budget and social contract considerations, the amount of grant funding beyond the current Provincial fiscal year is uncertain. In the extreme, the Province may find it necessary to address the funding assistance of each 3R's alternative examined in this study on a case-by-case basis. Due to this, evaluations under this criteria became indeterminate. Actual resolution may possibly depend on actual funding negotiations with each Region.

Notwithstanding this, and pending funding arrangements with Peel Region, it could be assumed that 30% of the capital costs of the alternative systems could be funded externally. While the primary source of funds may be Provincial grants, the assumption does not exclude the possibility of other private funding sources. If this were the case, the alternative systems in Peel may be funded as follows:

Existing	0
Committed	\$30.0 million
Direct Cost A	30.0 million
Direct Cost B	30.0 million
Expanded Blue Box	30.0 million
Wet/Dry	33.6 million
Mixed Waste A	43.0 million
Mixed Waste B	58.3 million

5.5.6 Potential Impact on Private Sector Industries

Assuming the continuation of existing municipal funding mechanisms, the effects analysis does not consider that there would be direct impacts on the private sector to offset costs related to the diversion commitment (apart from a possible mitigation scenario shown as part of the Impact on the Provincial Treasury). However, there does exist an indirect taxation effect. That is, a portion of diversion costs are levied in local taxes.

Table 5.5.6
System Effects on Business Taxes

	Total Existing Business Taxes (\$000)	Total Added Taxes Due To Diversion (\$000)	Percent Increase
Existing	\$124,809	\$1,748	1%
Committed	124,809	8,195	5%
Direct Cost (Revenue Neutral) A	124,809	4,009	2%
Direct Cost (Added Revenue) B	124,809	4,009	2%
Expanded Blue Box	124,809	9,220	6%
Wet/Dry	124,809	8,792	5%
Mixed Waste (Low Diversion) A	124,809	14,273	9%
Mixed Waste (High Diversion) B	124,809	11,907	7%

Source: Future Urban Research

Table 5.5.6 shows the level of private sector taxation in Peel for each diversion system. While taxes currently collected from the business sector now approach \$125 million. Tax charges for each system begin at 1% for existing; 2% for both direct cost systems (added revenue bag charges are only residentially related); 5% for committed and wet/dry; and expanded Blue Box; 7% for mixed waste/high diversion and 9% for the mixed waste/low diversion system.

As a result, the existing system is the highest ranked. The direct cost systems are the second highest ranked. The expanded Blue Box, the committed and the wet/dry systems are third

highest ranked. Conversely, the mixed waste/low diversion system is lowest ranked and the mixed waste/high diversion system is second lowest ranked.

5.5.7 Summary of Effects Analysis

The following summarizes the above effects by criteria and indicator for Peel Region and this is shown on Table 5.5.7.

The existing system is highest ranked. The existing system represents the least cost to the tax payers in Peel and does not present any debt costs to the financial structure. The committed, direct cost, expanded Blue Box and wet dry systems are the second highest ranked systems.

The mixed waste/high diversion system is the lowest ranked because it represents the highest tax effects and also the highest capital cost. Similarly, while less burdensome, the mixed waste/low diversion system also represents the second lowest ranked system.

Table 6.6.7

SYSTEM NET EFFECTS TABLE BY INDICATOR

PEEL

	Existing	Committed	Direct Cost A	Direct Cost B	Expanded Blue Box	Wet/Dry	Mixed Waste a	Mixed Waste b
	Highest Ranked	Second Highest Ranked	Second Highest Ranked	Second Highest Ranked	Second Highest Ranked	Second Highest Ranked	Second Lowest Ranked	Lowest Ranked
Impact on Local Taxpayers	1	2	2	2	2	7	8	8
Tax Levy	3,568,000	16,723,800	18,589,200	28,589,200	18,817,000	17,943,800	29,128,300	24,299,400
Tax Per Household	8	28	31	46	31	30	47	40
	1%	3%	3%	5%	3%	3%	5%	4%
Impact on Municipal Debt Burden	1	2	4	2	2	2	8	
Amount of Debt	0	90,300,000	90,300,000	90,300,000	90,300,000	90,300,000	91,000,000	105,000,000
Debt Payments	0	14,100,000	14,100,000	14,100,000	14,100,000	14,100,000	14,200,000	16,400,000
Debt Capacity	82%	66%	66%	66%	66%	66%	66%	64%
Impact on Municipal Reserves	2	2	1	2	8	7	8	
Total Reserves	0	0	0	10,000,000	0	-10,000,000	-39,000,000	-45,000,000
Reserves/Household	0	0	0	43	0	-43	-170	-195
Reserves/Expenses	0	0	0	67%	0%	-67%	-360%	-400%
Impact on Municipal Level of Service	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Operating Cost	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Expense/Household	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Impact on Provincial Treasury	pending funding arrangements	pending funding arrangements	pending funding arrangements	pending funding arrangements	pending funding arrangements	pending funding arrangements	pending funding arrangements	pending funding arrangements
Impact on Private Sector Industries	1	4	1	4	4	6	6	6
Private Funding Costs	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Higher Prices	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Private Taxes	1%	5%	2%	2%	6%	5%	9%	7%

5.5.8 Sensitivity Analysis

To confirm this ranking, the municipal finance component also undertook a sensitivity analysis on the key variables that may affect the criteria and indicators. The sensitivity analysis examined variations in capital costs (plus or minus 10% and 20%), rates of waste diversion (plus or minus 5%), variations in operating cost (plus or minus 5% and 10%) and finally, household growth including a no growth scenario. While changing the value of the indicators shown above, the sensitivity analysis shows that, given the ranges tested, the general ranking of the systems shown above would not significantly change.

Table 5.5.8

SENSITIVITY ANALYSIS
PEEL

	Existing	Committed	Direct Cost A	Direct Cost B	Expanded	Wet/Dry	Mixed a	Mixed b
Net Annual Costs	3,568	16,724	18,589	28,589	18,817	17,944	29,128	24,299
Capital Costs								
10%	3,568	18,130	19,996	29,996	20,224	19,350	30,546	25,935
20%	3,568	19,538	21,403	31,403	21,631	20,757	31,964	27,572
-10%	3,568	15,317	17,182	27,182	17,410	16,537	27,710	22,663
-20%	3,568	13,910	15,775	25,775	16,003	15,130	26,292	21,027
			no change in ranking					
Diversion Rate								
5% n/a		15,200	17,065	27,065	17,293	16,420	27,604	22,775
-5% n/a		18,247	20,113	30,113	20,341	19,468	30,652	25,873
			no change in ranking					
Operating Cost								
5%	3,568	17,237	19,516	29,516	19,786	19,128	30,882	26,053
10%	3,568	17,751	20,443	30,443	20,755	20,313	32,635	27,806
-5%	3,568	16,210	17,662	27,662	17,848	16,759	27,375	22,546
			no change in ranking					
Cost Per Tonne								
+ \$40	1,536	13,676	12,981	22,981	12,965	10,019	21,082	13,449
20	2,552	15,200	15,785	25,785	19,891	13,981	25,105	18,874
			higher disposal fees favour direct cost and mixed waste b					
Household Growth								
analysis	1%	3%	3%	5%	3%	3%	5%	4%
no growth	1%	4%	5%	7%	5%	5%	7%	6%
			no change in ranking					

Source: Future Urban Research

5.6 System Effects Summary

Tables 5.6.1 and 5.6.2 summarize the above ranking process for all Regions. Table 5.6.1 indicates each Region's effects analysis according to the ranking. Table 5.6.2 compares selected criteria indicators for each diversion system. Also, a reconciliation of costs from this analysis is made to the costs used in the analysis undertaken by Resource Integration Systems Ltd. This is shown in Schedule F.

Table 5.6.1

SYSTEM NET EFFECTS SUMMARY TABLE

System	Durham	Metro	York	Peel
Highest Ranked	Existing Direct Cost A Direct Cost B	Existing	Existing	Existing
Second Highest Ranked	Committed	Committed	Committed Direct Cost A	Committed Direct Cost A Direct Cost B Expanded Blue Wet/Dry
Third Highest Ranked	Expanded Blue	Direct Cost A Direct Cost B Expanded Blue	Direct Cost B Expanded Blue	
Third Lowest Ranked	Wet/Dry	Wet/Dry		
Second Lowest Ranked	Mixed Waste b	Mixed Waste b	Wet/Dry	Mixed Waste a
Lowest Ranked	Mixed Waste a	Mixed waste a	Mixed Waste a Mixed Waste b	Mixed Waste b
Source: Future Urban Research				

Table 5.6.2

REGIONAL SYSTEM NET EFFECTS BY SELECTED INDICATORS

	Durham	Metro	York	Peel
Existing				
Tax Per Household	9	13	10	8
Amount of Debt	0	0	0	0
Reserves	0	0	0	0
Level of Service	n/e	n/e	n/e	n/e
Provincial Funding	pending	pending	pending	pending
Private Sector Taxes	1%	1%	1%	1%
Committed				
Tax Per Household	11	23	12	28
Amount of Debt	3,856,000	135,681,000	2,785,000	90,300,000
Reserves	0	0	0	0
Level of Service	n/e	n/e	n/e	n/e
Provincial Funding	pending	pending	pending	pending
Private Sector Taxes	2%	2%	1%	5%
Direct Cost A				
Tax Per Household	9	31	12	31
Amount of Debt	3,856,000	135,681,000	2,785,000	90,300,000
Reserves	0	0	0	0
Level of Service	n/e	n/e	n/e	n/e
Provincial Funding	pending	pending	pending	pending
Private Sector Taxes	1%	3%	1%	2%
Direct Cost B				
Tax Per Household	19	54	32	46
Amount of Debt	3,856,000	135,681,000	2,785,000	90,300,000
Reserves	1,500,000	45,000,000	6,500,000	10,000,000
Level of Service	n/e	n/e	n/e	n/e
Provincial Funding	pending	pending	pending	pending
Private Sector Taxes	1%	3%	1%	2%
Expanded Blue				
Tax Per Household	14	31	17	31
Amount of Debt	9,000,000	135,681,000	10,000,000	90,300,000
Reserves	0	0	0	0
Level of Service	n/e	n/e	n/e	n/e
Provincial Funding	pending	pending	pending	pending
Private Sector Taxes	3%	3%	2%	6%
Source: Future Urban Research				

Table 5.6.2

REGIONAL SYSTEM NET EFFECTS BY SELECTED INDICATORS

	Durham	Metro	York	Peel
Wet/Dry				
Tax Per Household	27	23	53	30
Amount of Debt	39,500,000	166,781,000	45,000,000	90,300,000
Reserves	0	0	0	-10,000,000
Level of Service	n/e	n/e	n/e	n/e
Provincial Funding	pending	pending	pending	pending
Private Sector Taxes	6%	2%	7%	5%
Mixed Waste a				
Tax Per Household	33	72	77	47
Amount of Debt	50,000,000	240,984,000	57,785,000	91,000,000
Reserves	0	-25,000,000	0	-39,000,000
Level of Service	n/e	n/e	n/e	n/e
Provincial Funding	pending	pending	pending	pending
Private Sector Taxes	7%	7%	11%	9%
Mixed Waste b				
Tax Per Household	23	60	66	44
Amount of Debt	50,000,000	265,984,000	57,785,000	105,000,000
Reserves	0	-50,000,000	0	-45,000,000
Level of Service	n/e	n/e	n/e	n/e
Provincial Funding	pending	pending	pending	pending
Private Sector Taxes	5%	6%	9%	7%
Source: Future Urban Research				

SCHEDULE A:
DETAILED MUNICIPAL
FINANCE PROFILES

REGION OF DURHAM

MOE 3Rs ALTERNATIVE ANALYSYS IN SUPPORT OF IWA
MUNICIPAL FINANCE ASSESSMENT – FUTURE URBAN RESEARCH

REGION OF DURHAM POPULATION										
HOUSEHOLDS										
Population per Household	RMD 347,837	Oshawa 120,904	Ajax 45,046	Newcastle 37,769	Pickering 56,132	Whitby 49,948	Brock 10,082	Saugog 15,675	Uxbridge 12,281	TOTAL 347,837
	136,322	47,720	17,135	15,982	20,128	19,266	4,468	6,700	4,923	136,322
	2.55	2.53	2.63	2.36	2.79	2.59	2.26	2.34	2.49	2.55
<u>EQUALIZED TAXABLE ASSESSMENT</u>										
Residential Portion Percentage	74.2	58.9	79.6	85.1	79.6	75.6	88.2	89.3	87.2	74.2
Commercial/Other Portion Percentage	25.8	41.1	20.4	14.9	20.4	24.4	11.8	10.7	12.8	25.8
REVENUE										
Municipal Property Taxation	0	39,485	17,826	13,052	19,678	19,666	3,795	5,505	5,013	124,020
Residential & Farm	0	32,219	5,737	2,775	6,508	7,716	609	821	886	57,271
Commercial, Industrial & Business	0	1,815	430	2,803	1,397	649	191	218	271	7,774
Other Special Charges	0	73,519	23,993	18,630	27,583	28,031	4,595	6,544	6,170	189,065
TOTAL	126,867	47,158	14,524	10,561	13,677	15,871	2,749	3,469	3,249	238,125
Property Taxation	17,740	4,854	792	791	1,049	1,004	309	304	228	27,071
Unconditional Grants	76,429	4,679	1,048	1,641	2,263	1,813	625	893	658	90,049
Payments in Lieu of Taxes	0	2,348	269	1,195	5,353	1,394	99	116	217	10,991
Fees & Service Charges	26,140	11,549	2,576	1,951	4,326	3,510	465	564	799	51,880
Program Revenues	75,466	5,518	3,552	3,679	5,672	4,186	353	544	939	99,909
TOTAL	322,642	76,106	22,761	19,818	32,340	27,778	4,600	5,890	6,090	518,025
ASSESSMENT & TAX										
Levy – Local	62,198	Average Residential Share of Tax Levy per Household								
– Regional	126,867	– Local 481.03								
– School Board	221,054	– Regional 341.12								
Total Tax Levy	410,119	– School Board 961.25								
		Total Tax Levy 1,783.40								
Long – Term Debt Outstanding	21,840	5,683	691	5,590	979	408	51	0	51	35,293
Debt Charges	7,634	1,302	222	988	392	119	131	63	33	10,884
Reserves/Reserve Funds	101,633	35,766	10,262	14,327	13,409	18,471	1,820	1,705	1,909	199,302

REGION OF DURHAM

OPERATING EXPENDITURES

	RMD	Oshawa	Ajax	Newcastle	Pickering	Whitby	Brock	Scugog	Uxbridge	TOTAL	% of Total
General Government	11,037	10,570	4,146	4,517	6,708	5,477	1,050	1,170	1,208	45,883	9.6
Protection	44,943	13,273	4,426	2,502	6,303	5,396	634	684	576	78,737	16.6
Transportation	21,805	25,404	6,289	6,236	8,255	8,784	1,832	2,616	2,405	83,626	17.6
Environmental	42,522	699	26	43	26	214	0	0	34	43,554	9.2
- Sewer	28,352	0	0	0	199	0	0	0	0	28,551	6.0
- Water	22,690	1,884	729	1,701	649	1,178	121	341	192	29,485	6.2
- Solid Waste	102,416	1,535	55	136	182	265	74	37	0	104,700	22.0
Health & Social Services	0	19,846	5,797	4,018	9,435	5,620	893	967	1,446	48,022	10.1
Recreation	3,748	4,048	957	1,475	864	1,433	231	171	221	13,148	2.8
Planning	277,513	77,259	22,425	20,628	32,621	28,367	4,835	5,986	6,082	475,716	100.0
TOTAL											

CAPITAL FUND REVENUES

Revenue Fund	37,521	6,025	1,951	1,431	2,584	554	871	447	1,328	52,712	38.4
Reserves & Reserve Funds	13,726	9,174	9,019	5,336	3,022	11,005	573	307	851	53,013	38.6
Long Term Borrowing	610	0	0	16	0	7,000	33	8	0	7,667	5.6
Ontario Grants	8,740	1,814	1,115	1,160	791	3,587	941	309	807	19,264	14.0
Other Sources	1,014	1,317	1,887	1,113	64	60	0	22	51	4,528	3.3
TOTAL	61,611	18,330	13,972	8,056	6,461	22,206	2,418	1,093	3,037	137,184	100.0

CAPITAL FUND EXPENDITURES

General Government	1,609	1,538	499	507	1,966	181	23	34	988	7,345	5.3
Protection	1,657	259	506	1,030	1,253	1,033	223	250	125	6,336	4.6
Transportation	18,952	17,610	4,015	4,916	2,285	7,302	1,527	420	2,133	59,160	42.9
Environmental	12,159	736	0	0	524	249	0	0	0	13,668	9.9
- Sewer	10,969	137	0	0	32	11	0	0	0	11,149	8.1
- Water	5,124	0	0	0	0	346	0	0	0	5,470	4.0
- Solid Waste	2,712	20	0	19	8	17	1	0	0	2,777	2.0
Health & Social Services	0	7,389	9,938	1,368	3,109	6,458	809	121	476	29,668	21.5
Recreation	209	586	214	167	20	456	372	223	0	2,247	1.6
Planning	53,391	28,275	15,172	8,007	9,197	16,053	2,955	1,048	3,722	137,820	100.0
TOTAL											

PER HOUSEHOLD DATA

Revenue Fund Expenditures	2,036	1,619	1,309	1,291	1,621	1,472	1,082	893	1,236	3,490	
Capital Fund Expenditures	392	593	885	501	457	833	661	156	756	1,011	
Municipal Taxes	0	785	936	692	914	957	640	694	831	320	
Special Charges	234	8	2	147	23	4	23	6	32	209	
School	0	798	1,083	1,041	1,348	1,183	754	978	1,157	216	

METROPOLITAN TORONTO

METROPOLITAN TORONTO & REGION								
Metro	Toronto	Etobicoke	Scarborough	North York	York	East York	TOTAL	
<u>POPULATION</u>								
2,133,559	597,126	293,433	470,406	544,560	131,537	96,497	2,133,559	
<u>HOUSEHOLDS</u>								
884,421	286,218	116,467	174,530	205,989	56,266	44,951	884,421	
Population per Household	2.41	2.09	2.52	2.70	2.64	2.34	2.15	2.41
<u>EQUALIZED TAXABLE ASSESSMENT</u>								
241,897,000	95,251,000	34,700,000	38,486,000	57,275,000	8,588,000	7,597,000	241,897,000	
<u>REVENUE</u>								
Municipal Property Taxation								
Residential & Farm	0	255,189	109,595	154,126	201,076	46,848	37,432	804,266
Commercial, Industrial & Business	0	458,402	113,390	116,435	169,982	21,103	17,557	896,869
Other Special Charges	0	10,902	2,749	4,518	5,391	1,260	940	25,760
TOTAL	0	724,493	225,734	275,079	376,449	69,211	55,929	1,726,895
<u>ASSESSMENT & TAX</u>								
Property Taxation	1,142,176	362,061	105,894	142,176	184,457	43,745	33,177	2,013,686
Unconditional Grants	136,266	24,978	6,706	10,943	11,311	5,988	2,812	199,004
Conditional Grants	745,451	28,118	9,805	14,759	15,909	4,672	4,693	823,407
Payments in Lieu of Taxes	0	76,236	14,648	22,127	24,579	2,037	1,389	141,016
Fees & Service Charges	757,827	64,821	14,629	10,478	30,427	2,938	1,853	882,973
Program Revenues	268,382	174,964	64,464	81,984	114,056	20,252	16,206	740,308
TOTAL	3,050,102	731,178	216,146	282,467	380,739	79,632	60,130	4,800,394
Average Residential Share of Tax Levy per Household								
Levy – Local	584,719				246.04			
– Regional	1,142,176				620.73			
– School Board	2,119,195				1,151.70			
Total Tax Levy	3,846,090				2,018.47			
<u>Long – Term Debt Outstanding</u>								
Debt Charges	430,464	133,954	43,205	13,840	36,274	15,940	23,341	697,018
Reserves/Reserve Funds	127,175	32,533	9,419	5,450	9,597	4,520	4,441	193,135
	394,673	298,158	50,681	113,321	106,627	12,384	10,710	986,554

Average Residential Share of Tax Levy per Household	
– Local	246.04
– Regional	620.73
– School Board	1,151.70
Total Tax Levy	2,018.47

METROPOLITAN TORONTO & REGION

OPERATING EXPENDITURES

	Metro	Toronto	Etobicoke	Scarborough	North York	York	East York	% of Total
General Government	200,458	168,962	23,135	41,531	41,716	9,824	8,797	10.9
Protection	523,889	109,312	32,368	41,000	53,888	15,037	10,526	17.4
Transportation	867,969	90,856	26,212	39,622	48,176	11,447	6,339	24.1
Environmental	126,037	17,936	6,625	7,327	13,534	3,122	1,915	3.9
- Sewer	68,204	18,338	14,196	13,755	20,683	4,499	1,038	3.1
- Water	196,195	31,074	8,615	9,747	18,849	3,573	2,883	6.0
- Solid Waste	924,510	41,370	8,244	11,464	16,951	5,023	4,621	22.4
Health & Social Services	150,862	123,940	44,848	55,645	82,847	12,334	11,107	10.6
Recreation	17,057	35,223	3,599	7,418	4,965	1,383	1,087	1.6
Planning	3,075,181	637,011	167,842	227,809	301,609	66,242	48,313	100.0
TOTAL								

CAPITAL FUND REVENUES

Revenue Fund	119,439	12,678	4,194	8,552	28,094	1,874	309	26.3
Reserves & Reserve Funds	98,101	26,484	5,893	19,292	9,432	3,448	7,086	25.5
Long Term Borrowing	35,554	17,836	7,510	0	7,684	1,220	6,056	11.4
Ontario Grants	130,886	7,970	4,684	3,635	6,160	3,516	1,820	23.8
Other Sources	30,898	52,728	695	1,048	1,676	0	197	13.1
TOTAL	414,878	117,696	22,976	32,527	53,046	10,058	15,468	100.0

CAPITAL FUND EXPENDITURES

General Government	52,237	17,095	801	4,922	4,927	1,075	5,434	10.9
Protection	25,367	4,290	1,027	2,580	1,311	1,640	170	4.6
Transportation	193,046	25,300	11,161	7,902	24,069	6,157	3,784	34.1
Environmental	76,496	4,406	1,591	4,761	5,474	730	1,006	11.9
- Sewer	19,096	3,801	3,428	3,019	1,829	674	295	4.0
- Water	52,092	3,861	1,216	1,168	785	0	0	7.4
- Solid Waste	14,785	420	0	74	0	10	0	1.9
Health & Social Services	19,495	21,027	4,369	8,425	13,764	2,090	1,006	8.8
Recreation	237	129,392	0	565	0	878	(145)	16.4
Planning	452,851	209,592	23,593	33,416	52,159	13,254	11,550	100.0
TOTAL								

PER HOUSEHOLD DATA

Revenue Fund Expenditures	3,477	2,226	1,441	1,305	1,464	1,177	1,075	5,115
Capital Fund Expenditures	512	732	203	191	253	236	257	900
Municipal Taxes	0	770	861	878	907	818	800	
Special Charges	0	155	176	113	121	176	150	
School	0	917	1,136	1,052	1,190	848	916	

REGION OF YORK

MUNICIPAL FINANCE ASSESSMENT – FUTURE URBAN RESEARCH

REGION OF YORK	RMV	Aurora	Markham	Newmarket	Richmond Hill	Vaughan	Whitchurch Stouffville	East Guillimbury	Georgina	King	TOTAL
<u>POPULATION</u>	409,292	24,545	129,501	37,277	57,082	88,475	16,705	16,513	22,587	16,607	409,292
<u>HOUSEHOLDS</u>	149,036	9,081	42,930	13,121	24,380	29,194	6,228	5,629	12,537	5,936	149,036
Population per Household	2.75	2.70	3.02	2.84	2.34	3.03	2.68	2.93	1.80	2.80	2.75
<u>EQUALIZED TAXABLE ASSESSMENT</u>	49,697,000	2,579,000	15,913,000	3,306,000	7,753,000	13,064,000	1,847,000	1,294,000	2,018,000	1,924,000	49,697,000
Residential Portion Percentage	73.5	76.5	71.7	76.1	77.7	63.6	83.7	91.7	89.5	92.3	73.5
Commercial/Other Portion Percentage	26.5	23.5	28.3	23.9	22.3	36.4	16.3	8.3	10.5	7.7	26.5
<u>REVENUE</u>											
Municipal Property Taxation		0	37,327	9,272	25,415	29,344	5,622	4,306	8,416	4,902	133,582
Residential & Farm		0	17,008	3,974	9,827	23,386	1,373	466	1,270	539	61,333
Commercial, Industrial & Business		0	6,609	405	1,008	2,283	160	173	1,224	272	12,305
Other Special Charges		0	60,944	13,651	36,250	55,013	7,155	4,945	10,910	5,713	207,220
<u>TOTAL</u>											
Property Taxation	109,846	8,758	36,280	10,780	27,742	38,394	4,738	3,679	8,552	3,517	252,286
Unconditional Grants	17,818	472	1,952	1,014	1,508	2,125	291	378	1,099	232	26,889
Conditional Grants	41,203	789	4,642	1,143	3,151	3,411	671	746	1,198	852	57,806
Payments in Lieu of Taxes	0	250	888	375	271	750	111	63	122	148	2,978
Fees & Service Charges	5,482	1,930	13,008	4,148	3,956	12,268	1,009	642	1,033	965	44,441
Program Revenues	404	3,034	24,256	9,403	25,065	29,152	2,304	1,640	3,816	1,478	100,552
<u>TOTAL</u>	174,753	15,233	81,026	26,863	61,693	86,100	9,124	7,148	15,820	7,192	484,952
<u>ASSESSMENT & TAX</u>											
Levy – Local	97,374					313.55					
– Regional	109,846					518.89					
– School Board	405,855					1,917.20					
Total Tax Levy	613,075					2,749.64					
Long–Term Debt Outstanding	14,869	29	4,466	2,312	6,004	4,027	1,361	468	5,639	37	39,212
Debt Charges	3,007	16	1,193	715	1,744	1,038	347	103	985	35	9,183
Reserves/Reserve Funds	91,868	16,328	50,421	1,547	63,652	42,401	6,650	1,944	6,452	4,718	285,981

REGION OF YORK

OPERATING EXPENDITURES

	RMV	Aurora	Markham	Newmarket	Richmond Hill	Vaughan	Whitchurch Stouffville	East Gullimbury	Georgina	King	TOTAL	% of Total
General Government	6,211	2,099	7,953	4,378	10,692	10,585	1,454	1,132	2,316	944	47,764	10.9
Protection	51,510	1,696	13,425	2,311	6,352	11,999	1,148	647	1,574	1,000	91,662	20.9
Transportation	17,711	2,503	17,722	3,135	16,045	13,914	1,489	1,710	3,659	1,958	79,846	18.2
Environmental	21,413	84	875	310	3,553	4,284	305	71	581	6	31,482	7.2
- Water	20,282	1,755	3,146	1,027	1,824	3,166	467	317	767	247	32,998	7.5
- Solid Waste	0	975	5,903	2,313	2,216	5,701	873	526	1,264	1,037	20,808	4.8
Health & Social Services	53,751	0	19	0	309	175	46	0	113	1	54,414	12.4
Recreation	124	3,775	19,249	6,027	10,245	19,148	2,121	1,350	2,960	1,515	66,514	15.2
Planning	1,646	549	2,229	507	2,692	2,308	565	475	1,031	554	12,556	2.9
TOTAL	172,648	13,436	70,521	20,008	53,928	71,280	8,468	6,228	14,265	7,262	438,044	100.0

CAPITAL FUND REVENUES

Revenue Fund	8,928	329	1,307	140	7,847	789	389	664	2,181	363	22,937	9.3
Reserves & Reserve Funds	16,622	5,736	28,939	11,485	32,512	23,776	1,544	3,101	1,065	1,212	125,992	51.2
Long Term Borrowing	47,859	1,500	4,890	0	0	0	0	0	2	9	54,260	22.1
Ontario Grants	9,287	716	3,844	944	1,558	4,485	457	381	823	324	22,819	9.3
Other Sources	6,441	0	124	77	3,989	7,854	126	0	636	727	19,974	8.1
TOTAL	89,137	8,281	39,104	12,646	45,906	36,904	2,516	4,146	4,707	2,635	245,982	100.0

CAPITAL FUND EXPENDITURES

General Government	2,278	1,908	16,471	600	7,466	3,920	111	3,283	181	184	36,402	18.2
Protection	5,846	0	1,512	56	166	1,413	207	207	102	259	9,768	4.9
Transportation	27,788	1,353	11,758	2,041	6,045	16,649	831	524	1,904	510	69,403	34.7
Environmental	871	94	551	2,054	1,304	3,023	122	30	106	293	8,448	4.2
- Water	6,952	1,990	284	4,568	2,171	2,707	317	1,707	196	43	20,935	10.5
- Solid Waste	682	261	91	92	211	4	0	0	53	28	1,422	0.7
Health & Social Services	5,160	13	0	0	0	0	2	0	0	0	5,175	2.6
Recreation	0	1,148	3,844	2,798	12,783	22,732	540	183	3196	446	47,670	23.8
Planning	67	15	0	120	383	272	0	0	36	27	920	0.5
TOTAL	49,644	6,782	34,511	12,329	30,529	50,720	2,130	5,934	5,774	1,790	200,143	100.0

PER HOUSEHOLD DATA

Revenue Fund Expenditures	1,158	1,480	1,643	1,525	2,212	2,442	1,360	1,106	1,138	1,224		
Capital Fund Expenditures	333	747	804	940	1,252	1,738	342	1,054	461	302		
Municipal Taxes	0	882	810	612	954	894	763	663	578	720		
Special Charges	0	86	257	242	327	413	47	117	197	91		
School	0	1,396	1,826	1,242	1,655	1,912	1,401	1,224	836	1,876		

REGION OF PEEL

MOE 3Rs ALTERNATIVE ANALYSYS IN SUPPORT OF IWA
MUNICIPAL FINANCE ASSESSMENT – FUTURE URBAN RESEARCH

REGION OF PEEL POPULATION	RMP	Brampton	Mississauga	Caledon	TOTAL	% of Total
	608,327	192,045	385,156	31,126	608,327	
<u>HOUSEHOLDS</u>						
Population per Household	2.71	2.74	2.70	2.79	2.71	
<u>EQUALIZED TAXABLE ASSESSMENT</u>	61,294,000	17,219,000	41,064,000	3,011,000	61,294,000	
Residential Portion Percentage	66.6	67.7	64.7	86.4	66.6	
Commercial/Other Portion Percentage	33.4	32.3	35.3	13.6	33.4	
<u>REVENUE</u>						
Municipal Property Taxation						
Residential & Farm	0	60,460	130,767	11,602	202,829	60.6
Commercial, Industrial & Business	0	35,058	87,521	2,230	124,809	37.3
Other Special Charges	0	1,612	4,341	1,070	7,023	2.1
TOTAL	0	97,130	222,629	14,902	334,661	100.0
Property Taxation	224,182	60,931	120,791	10,045	415,949	50.2
Unconditional Grants	30,309	3,337	7,389	563	41,598	5.0
Conditional Grants	71,682	5,857	18,348	1,757	97,644	11.8
Payments in Lieu of Taxes	0	1,437	14,356	108	15,901	1.9
Fees & Service Charges	51,221	16,765	45,678	1,767	115,431	13.9
Program Revenues	90,111	16,482	35,178	1,046	142,817	17.2
TOTAL	467,505	104,809	241,740	15,286	829,340	100.0

ASSESSMENT & TAX

Levy – Local	110,479	Average Residential Share of Tax Levy per Household	
– Regional	224,182		
– School Board	525,650		
Total Tax Levy	860,311		
		Local	433.97
		– Regional	324.98
		– School Board	1,192.08
		Total Tax Levy	1,951.03

Long – Term Debt Outstanding	65,032	5,098	1,087	107,801
Debt Charges	25,832	9,458	355	38,951
Reserves/Reserve Funds	275,651	63,373	3,491	640,063

MOE 3Rs ALTERNATIVE ANALYSIS IN SUPPORT OF IWA
MUNICIPAL FINANCE ASSESSMENT - FUTURE URBAN RESEARCH

Page 2 of 2

REGION OF PEEL

	RMP	Brampton	Mississauga	Caledon	% of Total
<u>OPERATING EXPENDITURES</u>					
General Government	21,627	16,420	61,053	3,457	102,557
Protection	97,698	20,708	37,956	1,799	158,161
Transportation	16,832	34,654	80,192	4,688	136,366
Environmental	50,437	755	3,741	94	55,027
- Sewer	48,678	0	0	0	48,678
- Water	43,860	3,877	8,809	973	57,519
- Solid Waste	103,928	607	731	7	105,273
Health & Social Services	0	28,263	44,155	3,658	76,076
Recreation	2,559	2,811	8,285	931	14,586
Planning	385,619	108,095	244,922	15,607	754,243
TOTAL					100.0

CAPITAL FUND REVENUES

Revenue Fund	26,155	1,090	0	1,440	28,685
Reserves & Reserve Funds	60,993	25,083	83,041	1,908	171,025
Long Term Borrowing	0	0	0	20	20
Ontario Grants	7,159	7,605	31,254	967	46,985
Other Sources	7,347	790	248	202	8,587
TOTAL	101,654	34,568	114,543	4,537	255,302
					100.0

CAPITAL FUND EXPENDITURES

General Government	2,174	17,004	5,784	160	25,122
Protection	11,558	1,193	3,650	528	16,929
Transportation	24,348	19,911	67,678	2,762	114,699
Environmental	14,099	265	720	0	15,084
- Sewer	24,094	0	0	0	24,094
- Water	6,037	0	0	0	6,037
- Solid Waste	3,293	9	0	0	3,302
Health & Social Services	0	8,405	41,032	1,555	50,992
Recreation	26	982	1	404	1,413
Planning	85,629	47,769	118,865	5,409	257,672
TOTAL					100.0

PER HOUSEHOLD DATA

Revenue Fund Expenditures	1,721	1,540	1,716	1,399	3,366
Capital Fund Expenditures	382	681	833	485	1,150
Municipal Taxes	0	761	769	910	
Special Charges	222	0	7	61	
School	0	1,120	1,256	1,537	

REGION OF HALTON

REGION OF HALTON POPULATION	RMH 281,668	Burlington 118,546	Halton Hills 34,189	Milton 30,529	Oakville 98,404	TOTAL 281,668	% of Total
HOUSEHOLDS	105,943	46,332	11,857	10,129	37,625	105,943	
Population per Household	2.66	2.56	2.88	3.01	2.62	2.66	
<u>EQUALIZED TAXABLE ASSESSMENT</u>	23,688,000	9,011,000	2,459,000	2,523,000	9,695,000	23,688,000	
Residential Portion Percentage	74.8	75.3	78.9	69.9	74.6	74.8	
Commercial/Other Portion Percentage	25.2	24.7	21.1	30.1	25.4	25.2	
<u>REVENUE</u>							
Municipal Property Taxation							
Residential & Farm	0	40,853	10,400	8,137	40,147	99,537	68.2
Commercial, Industrial & Business	0	16,980	3,518	4,602	17,055	42,155	28.9
Other Special Charges	0	1,937	381	397	1,513	4,228	2.9
TOTAL	0	59,770	14,299	13,136	58,715	145,920	100.0
Property Taxation	97,634	36,384	8,601	7,154	36,184	185,957	51.8
Unconditional Grants	13,896	2,566	1,056	535	2,059	20,112	5.6
Conditional Grants	29,531	4,563	1,104	1,247	4,760	41,205	11.5
Payments in Lieu of Taxes	0	2,694	335	558	1,987	5,574	1.6
Fees & Service Charges	19,153	9,829	1,553	1,248	8,821	40,604	11.3
Program Revenues	46,010	7,303	1,734	1,984	8,536	65,567	18.3
TOTAL	206,224	63,339	14,383	12,726	62,347	359,019	100.0

ASSESSMENT & TAX Levy – Local	Average Residential Share of Tax Levy per Household			
Levy – Local	48,286	– Local	502.13	
– Regional	97,634	– Regional	333.07	
– School	200,683	– School	1,148.65	
Total Tax Levy	346,603	Total Tax Levy	1,983.85	
Long – Term Debt Outstanding	52,596		1,115	6,038
Debt Charges	14,873		375	1,400
Reserves/Reserve Funds	68,677		7,340	39,484
				78,148
				21,248
				161,800

MOE 3Rs ALTERNATIVE ANALYSYS IN SUPPORT OF IWA
MUNICIPAL FINANCE ASSESSMENT - FUTURE URBAN RESEARCH

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REGION OF HALTON

	RMH	Burlington	Halton Hills	Milton	Oakville	% of Total
<u>OPERATING EXPENDITURES</u>						
General Government	10,505	10,188	2,967	1,568	8,632	33,860
Protection	35,759	9,965	1,833	1,257	11,115	59,929
Transportation	4,437	20,126	4,142	4,979	20,610	54,294
Environmental	23,874	883	118	66	340	25,281
- Sewer						
- Water	22,258	0	0	0	0	22,258
- Solid Waste	22,489	1,721	400	385	2,552	27,547
Health & Social Services	43,897	252	199	11	421	44,780
Recreation	1,084	17,019	3,921	3,854	15,969	41,847
Planning	2,478	2,242	657	509	2,358	8,244
TOTAL	166,781	62,396	14,237	12,629	61,997	318,040

CAPITAL FUND REVENUES

Revenue Fund	11,803	1,491	1,159	1,062	4,456	19,971
Reserves & Reserve Funds	35,886	15,401	1,902	1,637	11,746	66,572
Long Term Borrowing	13,800	1,800	406	0	610	16,616
Ontario Grants	8,419	4,239	1,260	2,891	7,741	24,550
Other Sources	4,025	42	198	195	2,492	6,952
TOTAL	73,933	22,973	4,925	5,785	27,045	134,661

CAPITAL FUND EXPENDITURES

General Government	15,644	893	173	85	573	17,368
Protection	1,792	1,899	205	163	992	5,051
Transportation	5,004	14,876	3,385	3,399	18,211	44,875
Environmental	16,547	313	64	1	154	17,079
- Sewer						
- Water	7,443	0	0	0	0	7,443
- Solid Waste	16,174	0	0	0	242	16,416
Health & Social Services	1,092	52	2	40	0	1,186
Recreation	1,080	6,544	454	1,077	9,311	18,466
Planning	179	25	3	0	271	478
TOTAL	64,955	24,602	4,286	4,765	29,754	128,362

PER HOUSEHOLD DATA

Revenue Fund Expenditures	1,574	1,347	1,201	1,247	1,648	3,002
Capital Fund Expenditures	613	531	361	467	792	1,212
Municipal Taxes	0	798	743	678	971	
Special Charges	252	5	3	2	9	
School	0	1,092	1,045	1,114	1,339	

SCHEDULE B:
COSTS OF DIVERSION
BY MUNICIPALITY

GTA 3R ANALYSIS

(1992 Budget)										Residential
	Gross Cost	Rev & Grants	Net Cost	Residential Share of Taxes	Residential Costs	1991 House-holds	Total Costs Per Tonne		Gross	Net
							Gross	Tonne		
Halton Region										
MRF	306,600		306,600							
Contract	1,718,400		1,718,400							
Vehicles	294,600		294,600							
HHW	708,300		708,300							
Debt Charges	676,300		676,300							
Igloo	56,700		56,700							
Admin	702,400	2,200,000	-1,497,600							
Total Costs	4,463,300	2,200,000	2,263,300	60%	1,357,980	106,420	27,000	165	84	42
Durham Region										
Overhead	401,320		401,320							
Facilities Manage	67,300		67,300							
MRF	3,029,700		3,029,700							
Blue Box	1,767,600		1,767,600							
Operations	924,500		924,500							
Material Sales	0	543,100	-543,100							
MOE		596,000	-596,000							
Total Costs	6,190,420	1,139,100	5,051,320	59%	2,980,279	136,135	38,805	160	130	45
York Region										
Composting	725,000		725,000							
MOE	0	265,000	-265,000							
HHW	1,060,000		1,060,000							
MOE	0	90,000	-90,000							
Other rev	0	4,000	-4,000							
Subtotal	1,785,000	359,000	4,425,000							
										22

GTA 3R ANALYSIS

(1992 Budget)						
	Gross Cost	Rev & Grants	Net Cost	Residential Share of Taxes	Residential Costs	1991 Households
				Tonnage	Total Costs Per Tonne	Cost Per Household Net
Markham						
Grant		650,000				
Revenue B Box		526,100				
Yard						
O'head						
Advert						
Coll'n						
GST						
Subtotal	2,986,270	1,176,100	1,810,170			
Newmarket						
Contract						
Depot						
Compost						
Institution						
Tip Fee						
Other						
Richmond Hill						
Subtotal	686,448	0	686,448			
Subtotal Estimate	3,100,000	1,000,000	2,100,000			
Vaughan						
Budget 1991						
Curbside		281,600				
Compost						
HHW						
Subtotal	1,090,004	281,600	808,404			

**GTA 3R ANALYSIS
TOTAL WASTE DIVERSION COSTS
(1992 Budget)**

(1992 Budget)											
	Gross Cost	Rev & Grants	Net Cost	Residential Share of Taxes	Residential Costs	1991 Households	Tonnage	Total Costs Per Tonne		Gross	Net
W. Stouffville Contract Line Items		86,016									
King Contract Other	217,572	86,016	131,556								
Subtotal	222,400	0	222,400								
Total Costs	10,848,341	3,077,640	7,770,701	70%	5,439,491	150,485	56,454	192	138	72	36

GTA 3R ANALYSIS
TOTAL WASTE DIVERSION COSTS
(1992 Budget)

	Gross Cost	Rev & Grants	Net Cost	Residential Share of Taxes	Residential Costs	1991 House- holds	Tonnage	Total Costs Per Tonne Gross	Net	Gross	Residential Cost Per Household Net
Mississauga	0		0								
Admin	215,155		215,155								
Recycling	4,988,200		4,988,200								
Composting	808,000		808,000								
	0		0								
	0		0								
	0	900,000	-900,000								
	0		0								
Subtotal	6,011,355	900,000	5,111,355								
Total Costs	12,622,910	1,955,000	10,667,910	51%	5,440,634	229,670	60,559	208	176	55	24

**GTA 3R ANALYSIS
TOTAL WASTE DIVERSION COSTS
(1992 Budget)**

	Gross Cost	Rev & Grants	Net Cost	Residential Share of Taxes	Residential Costs	1991 House- holds	Tonnage	Total Costs Per Tonne		Residential Cost Per Household
								Gross	Net	Net
Metro Toronto										
Waste Rec & Redn										
Rec Opn										
Rev		1,950,000								
Grant		4,232,500								
Subtotal	26,462,400		6,182,500							
Etobicoke										
Recycle										
Apartment										
Subtotal	1,789,340	0	1,789,340							
North York										
Collection										
Leaf Comp										
Subtotal	3,328,900	0	3,328,900							
Scarborough										
Subtotal	8,233,100	81,800	8,151,300							
Toronto										
Subtotal	8,620,000	188,000	8,432,000							

**GTA 3R ANALYSIS
TOTAL WASTE DIVERSION COSTS
(1992 Budget)**

York Collection	Gross Cost	Rev & Grants	Net Cost	Residential Share of Taxes	Residential Costs	1991 House- holds	Tonnage	Total Costs Per Tonne		Residential Cost Per Household
								Gross	Net	
E. York	717,407	0	717,407							
Yard Waste										
Xmas Tree										
Recycling										
Subtotal	1,535,895	0	1,535,895							
Total Costs	50,687,042	6,452,300	44,234,742	48%	21,232,676	864,555	209,682	242	211	59
Total GTA	84,812,013	14,824,040	69,987,973	52%	36,451,060	1,487,265	392,500	216	178	57
Total GTA Excl Metr	34,124,971	8,371,740	25,753,231	59%	15,218,384	622,710	182,818	187	141	55
										24

Source: 1992 Current Operating Municipal Budgets

SCHEDULE C:
EFFECTS ANALYSIS
OF
ALTERNATIVE SYSTEMS

REGION OF DURHAM

MOE 3Rs ANALYSIS MUNICIPAL FINANCE COMPONENT			RESIDENTIAL SYSTEMS				C-1	
DATA NEEDED FOR EACH COMPONENT			DURHAM					
	Gross Capital Costs (buildings, vehicles equipment, etc.)	Value of Potential External Capital Funding Sources	Annual Operating Cost Estimates (Labour, Overhead, Maint., Repair, etc.)	Added Operating Overhead Costs	Potential Annual Operating Cost Savings	Net Annual Costs (incl Annualized Capital Cost)		
Existing			5,091,865 DIV RT 27%	0 0%	-2,997,000 DIVERT 29,970 DISP/TONN 100	2,094,865		
Committed	3,855,900 MRF EXP	0	5,115,865 DIV RT 28%	0 0%	-3,108,000 DIVERT 31,080 DISP/TONN 100	2,608,692		
Direct Cost A	3,855,900 MRF EXP	0	8,197,671 DIV RT 48%	409,884 5%	-7,200,000 DIVERT 72,000 DISP/TONN 100	2,008,381		
Direct Cost B	3,875,500 MRF EXP	0	8,197,671 DIV RT 48%	409,884 5%	-3,700,000 DIVERT 72,000 DISP/TONN 100	5,511,435		
Expanded Blue	9,000,000 MRF EXP	0	9,803,955 DIV RT 53%	490,198 5%	-7,950,000 DIVERT 79,500 DISP/TONN 100	3,746,534		
Wet / Dry	39,500,000 MRF EXP, COMP INT 11	0	11,134,145 DIV RT 64%	556,707 5%	-9,600,000 DIVERT 96,000 DISP/TONN 100	8,245,746		
Mixed Waste a	50,000,000 FACILITY	0	12,374,715 DIV RT 69%	618,736 5%	-10,350,000 DIVERT 103,500 DISP/TONN 100	10,434,455		
Mixed Waste b	50,000,000 FACILITY	0	12,374,715 DIV RT 92%	618,736 5%	-13,800,000 DIVERT 138,000 DISP/TONN 100	6,984,455		

EFFECTS ANALYSIS OF 3R COMMITMENTS

DIVERSION COSTS PER HOUSEHOLD

C-2

	3R Commitment	Annual Cost of Commitment	Residential Share of Annual Costs %	\$	Total Business Tax (\$000s)	Percent Business Tax
					57,271	
Existing	0	2,094,865	59%	1,235,970	859	1%
Committed	3,855,900	2,608,692	59%	1,539,128	1,070	2%
Direct Cost A	3,855,900	2,008,381	59%	1,184,945	823	1%
Direct Cost B	3,875,500	5,511,435	59%	3,251,747	823	1%
Expanded	9,000,000	3,746,534	59%	2,210,455	1,536	3%
Wet/dry	39,500,000	8,245,746	59%	4,864,990	3,381	6%
Mixed a	50,000,000	10,434,455	59%	6,156,329	4,278	7%
Mixed b	50,000,000	6,984,455	59%	4,120,829	2,864	5%

	Existing Residential Costs	Cost of Commitment	Total Future Residential Costs	Total Future Households	Costs Per Household Future	Existing	Percent Change
Existing	0	1,235,970	1,235,970	202,040	0	9	--
Committed	1,235,970	303,158	2,137,480	202,040	11	9	17%
Dir Cost A	1,235,970	-51,025	1,783,297	202,040	9	9	-3%
Dir Cost B	1,235,970	2,015,776	3,850,099	202,040	19	9	110%
Expanded	1,235,970	974,484	2,808,807	202,040	14	9	53%
Wet/dry	1,235,970	3,629,020	5,463,342	202,040	27	9	198%
Mixed a	1,235,970	4,920,358	6,754,680	202,040	33	9	268%
Mixed b	1,235,970	2,884,858	4,719,180	202,040	23	9	157%

Note: Household growth is used to show the effect of property assessment growth, but commercial/industrial assessment growth will not change the taxation split in the future. Moreover, new household growth will decrease the existing household cost for diversion, while future household growth beyond the period shown here, but still serviced by the committed capital is not included in the analysis.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

MUNICIPAL TAXATION PER HOUSEHOLD

C-3

	Total Municipal Taxation (\$000)	Existing Cost of Diversion (\$000)	Annual Cost of Commitment (\$000)	Existing Diversion Cost as a Percent of Total Taxation	Future Diversion Cost as a Percent of Total Taxation
Existing	189,065	0	2,095	0%	1%
Committed	189,065	1,236	2,609	1%	2%
Dir Cost A	189,065	1,236	2,008	1%	2%
Dir Cost B	189,065	1,236	5,511	1%	4%
Expanded	189,065	1,236	3,747	1%	3%
Wet/dry	189,065	1,236	8,246	1%	5%
Mixed a	189,065	1,236	10,434	1%	6%
Mixed b	189,065	1,236	6,984	1%	4%

	Total Municipal Taxation Per Hshold	Cost of Diversion Commitment Per Hshold	Percent Increase in Household Taxation
Existing	1,032	9	1%
Committed	1,032	11	1%
Dir Cost A	1,032	9	1%
Dir Cost B	1,032	19	2%
Expanded	1,032	14	1%
Wet/dry	1,032	27	3%
Mixed a	1,032	33	3%
Mixed b	1,032	23	2%

Note: If household growth, i.e. residential property assessment, is also taken into account, changes to household taxation resulting from diversion costs in Durham and York, and Halton would be negative.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

MUNICIPAL DEBT

C-4

	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing	35,293	0	0%
Committed	35,293	3,856	11%
Dir Cost A	35,293	3,856	11%
Dir Cost B	35,293	3,876	11%
Expanded	35,293	9,000	26%
Wet/dry	35,293	39,500	112%
Mixed a	35,293	50,000	142%
Mixed b	35,293	50,000	142%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

DEBT PAYMENTS

C-5

	Existing Debt Charges (\$000)	Existing Expenditures (\$000)	Percent Existing Debt Charges / Expenditures	
Existing	10,884	475,716	2.3%	
Committed	10,884	475,716	2.3%	
Dir Cost A	10,884	475,716	2.3%	
Dir Cost B	10,884	475,716	2.3%	
Expanded	10,884	475,716	2.3%	
Wet/dry	10,884	475,716	2.3%	
Mixed a	10,884	475,716	2.3%	
Mixed b	10,884	475,716	2.3%	
	Future Commitment D-Charges	Future Debt Charges Committed Plus Existing	Percent Future Debt Charges to Expenditures	Increase
Existing	0	10,884	2.3%	0.0%
Committed	601	11,485	2.4%	0.1%
Dir Cost A	601	11,485	2.4%	0.1%
Dir Cost B	604	11,488	2.4%	0.1%
Expanded	1,402	12,286	2.6%	0.3%
Wet/dry	6,155	17,039	3.6%	1.3%
Mixed a	7,791	18,675	3.9%	1.6%
Mixed b	7,791	18,675	3.9%	1.6%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

DEBT CAPACITY

C-6

	Existing Total Available Debt Capacity	Existing Debt	Current Remaining Debt Capacity	Percent Remaining	Committed Diversion	Percent Capacity Remaining After Committed
Existing	370,074	35,293	334,781	90%	0	90%
Committed	370,074	35,293	334,781	90%	3,856	89%
Dir Cost A	370,074	35,293	334,781	90%	3,856	89%
Dir Cost B	370,074	35,293	334,781	90%	3,876	89%
Expanded	370,074	35,293	334,781	90%	9,000	88%
Wet/dry	370,074	35,293	334,781	90%	39,500	80%
Mixed a	370,074	35,293	334,781	90%	50,000	77%
Mixed b	370,074	35,293	334,781	90%	50,000	77%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

FUTURE GTA HOUSEHOLDS

C-7

	1991 Households	New Households	Total Future Households	Percent Increase
Existing	136,135	65,905	202,040	48%
Committed	136,135	65,905	202,040	48%
Dir Cost A	136,135	65,905	202,040	48%
Dir Cost B	136,135	65,905	202,040	48%
Expanded	136,135	65,905	202,040	48%
Wet/dry	136,135	65,905	202,040	48%
Mixed a	136,135	65,905	202,040	48%
Mixed b	136,135	65,905	202,040	48%

Source: Hardy Stevenson and Associates

METROPOLITAN TORONTO

MOE 3Rs ANALYSIS MUNICIPAL FINANCE COMPONENT				RESIDENTIAL SYSTEMS				C-8	
				Metro					
	Gross Capital Costs (buildings, vehicles equipment, etc.)	Capital Funding Sources		Annual Operating Cost Estimates (Labour, Overhead, Maint., Repair, etc.)	Added Operating Overhead Costs	Potential Annual Operating Cost Savings	Potential Annual Operating Cost Savings	Net Annual Levy (incl Annualized Capital Cost)	
Existing				30,268,613 DIV RT	13,966,129 46%	-20,487,605 DIVERT DISP/TONNE	204,876 100	23,747,137	
Committed	135,681,000	0		32,787,832 DIV RT	13,115,133 40%	-24,682,173 DIVERT DISP/TONNE	246,822 100	42,362,618	
Direct Cost A	135,681,000	0		66,150,865 DIV RT	19,845,260 30%	-49,364,345 DIVERT DISP/TONNE	493,643 100	57,773,605	
Direct Cost B	135,681,000	0		66,150,865 DIV RT	19,845,260 30%	-4,364,345 DIVERT DISP/TONNE	493,643 100	102,773,605	
Expanded Blue	135,681,000	0		78,826,847 DIV RT	15,765,369 20%	-56,416,394 DIVERT DISP/TONNE	564,164 100	59,317,648	
Wet / Dry	166,781,000 INT CAPTL	0 31 Reserve		78,430,357 DIV RT	11,764,554 15%	-72,871,176 DIVERT DISP/TONNE	728,712 100	43,311,565	
Mixed Waste a	265,984,000 FAC COMP	25,000,000 Reserve		152,820,009 DIV RT	22,923,001 15%	-75,221,859 DIVERT DISP/TONNE	752,219 100	138,071,300	
Mixed Waste b	315,984,000	50,000,000 Reserve		152,820,009 DIV RT	22,923,001 15%	-101,079,373 DIVERT DISP/TONNE	1,010,794 100	116,109,288	

EFFECTS ANALYSIS OF 3R COMMITMENTS

Metro

C-9

DIVERSION COSTS PER HOUSEHOLD

GROWTH

9%

	3R Capital	Annual Cost of Diversion	Residential Share of Annual Costs %	\$	Total Business Tax (\$000s)	Percent Business Tax
					896,869	
Existing	0	23,747,137	48%	11,398,626	12,349	1%
Committed	135,681,000	42,362,618	48%	20,334,057	22,029	2%
Direct Cost A	135,681,000	57,773,605	48%	27,731,330	30,042	3%
Direct Cost B	135,681,000	102,773,605	48%	49,331,330	43,442	4%
Expanded	135,681,000	59,317,648	48%	28,472,471	30,845	3%
Wet/dry	166,781,000	43,311,565	48%	20,789,551	22,522	2%
Mixed a	240,984,000	138,071,300	48%	66,274,224	71,797	7%
Mixed b	265,984,000	116,109,288	48%	55,732,458	60,377	6%

	Existing Residential Costs	Cost of Commitment	Total Future Residential Costs	Total Future Households	Costs Per Household Future	Existing	Percent Change
Existing	0	11,398,626	11,398,626	940,663	0	13	0%
Committed	11,398,626	8,935,431	21,337,494	940,663	23	13	72%
Dir Cost A	11,398,626	16,332,705	28,734,768	940,663	31	13	132%
Dir Cost B	11,398,626	37,932,705	50,334,768	940,663	54	13	306%
Expanded	11,398,626	17,073,845	29,475,908	940,663	31	13	138%
Wet/dry	11,398,626	9,390,925	21,792,988	940,663	23	13	76%
Mixed a	11,398,626	54,875,598	67,277,661	940,663	72	13	442%
Mixed b	11,398,626	44,333,832	56,735,895	940,663	60	13	357%

Note: Household growth is used to show the effect of property assessment growth, but commercial/industrial assessment growth will not change the taxation split in the future. Moreover, new household growth will decrease the existing household cost for diversion, while future household growth beyond the period shown here, but still serviced by the committed capital is not included in the analysis.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

Metro

MUNICIPAL TAXATION PER HOUSEHOLD

C-10

	Total Municipal Taxation (\$000)	Existing Cost of Diversion (\$000)	Annual Cost of Commitment (\$000)	Existing Diversion Cost as a Percent of Total Taxation	Future Diversion Cost as a Percent of Total Taxation
Existing	1,726,895	0	23,747	0%	1%
Committed	1,726,895	11,399	42,363	1%	3%
Dir Cost A	1,726,895	11,399	57,774	1%	4%
Dir Cost B	1,726,895	11,399	102,774	1%	7%
Expanded	1,726,895	11,399	59,318	1%	4%
Wet/dry	1,726,895	11,399	43,312	1%	3%
Mixed a	1,726,895	11,399	138,071	1%	9%
Mixed b	1,726,895	11,399	116,109	1%	7%

	Total Municipal Taxation Per Hshold	Cost of Diversion Commitment Per Hshold	Percent Increase in Household Taxation
Existing	1,016	13	1%
Committed	1,016	23	2%
Dir Cost A	1,016	31	3%
Dir Cost B	1,016	54	5%
Expanded	1,016	31	3%
Wet/dry	1,016	23	2%
Mixed a	1,016	72	7%
Mixed b	1,016	60	6%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

Metro

MUNICIPAL DEBT

C-11

	Total Exiting Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing	697,018	0	0%
Committed	697,018	135,681	19%
Dir Cost A	697,018	135,681	19%
Dir Cost B	697,018	135,681	19%
Expanded	697,018	135,681	19%
Wet/dry	697,018	166,781	24%
Mixed a	697,018	240,984	35%
Mixed b	697,018	265,984	38%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

Metro

DEBT PAYMENTS

C-12

	Existing Debt Charges (\$000)	Existing Expenditures (\$000)	Percent Existing Debt Charges / Expenditures	
Existing	193,135	4,524,007	4.3%	
Committed	193,135	4,524,007	4.3%	
Dir Cost A	193,135	4,524,007	4.3%	
Dir Cost B	193,135	4,524,007	4.3%	
Expanded	193,135	4,524,007	4.3%	
Wet/dry	193,135	4,524,007	4.3%	
Mixed a	193,135	4,524,007	4.3%	
Mixed b	193,135	4,524,007	4.3%	
	Future Commitment D-Charges	Future Debt Charges Committed Plus Existing	Percent Future Debt Charges to Expenditures	Increase
Existing	0	193,135	4.3%	0.0%
Committed	21,142	214,277	4.7%	0.5%
Dir Cost A	21,142	214,277	4.7%	0.5%
Dir Cost B	21,142	214,277	4.7%	0.5%
Expanded	21,142	214,277	4.7%	0.5%
Wet/dry	25,988	219,123	4.8%	0.6%
Mixed a	37,550	230,685	5.1%	0.8%
Mixed b	41,446	234,581	5.2%	0.9%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

Metro

DEBT CAPACITY

C-13

	Existing Total Available Debt Capacity	Existing Debt	Current Remaining Debt Capacity	Percent Remaining	Committed Diversion	Percent Capacity Remaining After Committed
Existing	3,519,362	697,018	2,822,344	80%	0	80%
Committed	3,519,362	697,018	2,822,344	80%	135,681	76%
Dir Cost A	3,519,362	697,018	2,822,344	80%	135,681	76%
Dir Cost B	3,519,362	697,018	2,822,344	80%	135,681	76%
Expanded	3,519,362	697,018	2,822,344	80%	135,681	76%
Wet/dry	3,519,362	697,018	2,822,344	80%	166,781	75%
Mixed a	3,519,362	697,018	2,822,344	80%	240,984	73%
Mixed b	3,519,362	697,018	2,822,344	80%	265,984	73%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

Metro

FUTURE GTA HOUSEHOLDS

C-14

	1991 Households	New Households	Total Future Households	Percent Increase
Existing	864,555	76,108	940,663	9%
Committed	864,555	76,108	940,663	9%
Dir Cost A	864,555	76,108	940,663	9%
Dir Cost B	864,555	76,108	940,663	9%
Expanded	864,555	76,108	940,663	9%
Wet/dry	864,555	76,108	940,663	9%
Mixed a	864,555	76,108	940,663	9%
Mixed b	864,555	76,108	940,663	9%

Source: Hardy Stevenson and Associates

REGION OF YORK

MOE 3Rs ANALYSIS MUNICIPAL FINANCE COMPONENT				RESIDENTIAL SYSTEMS				C-15	
				York					
	Gross Capital Costs (buildings, vehicles equipment, etc.)	Capital Funding Sources	Annual Operating Cost Estimates (Labour, Maint., Repair, etc.)	Added Operating Overhead Costs	Potential Annual Operating Cost Savings	Net Annual Levy (Incl Annualized Capital Cost)			
Existing			6,449,606 DIV RT	1,321,095 20%	-5,544,000 DIVERT DISP/TONNE	2,226,701 55,440 100			
Committed	2,785,100	0	6,449,606 DIV RT	1,321,095 20%	-5,544,000 DIVERT DISP/TONNE	2,660,676 55,440 100			
Direct Cost A	2,785,100	0	10,067,256 DIV RT	2,013,451 20%	-9,900,000 DIVERT DISP/TONNE	2,614,682 99,000 100			
Direct Cost B	2,785,100	0	10,067,256 DIV RT	2,013,451 20%	-3,400,000 DIVERT DISP/TONNE	9,114,662 99,000 100			
Expanded Blue	10,000,000	0	11,617,896 DIV RT	2,323,579 20%	-11,088,000 DIVERT DISP/TONNE	4,411,676 110,880 100			
Wet / Dry	45,000,000 INT CAPTL	0 10	19,014,943 DIV RT	2,852,241 15%	-12,870,000 DIVERT DISP/TONNE	16,009,088 128,700 100			
Mixed Waste a	57,785,100 FAC COMP	0	24,915,115 DIV RT	3,737,267 15%	-14,058,000 DIVERT DISP/TONNE	23,598,462 140,580 100			
Mixed Waste b	57,785,100	0	24,915,115 DIV RT	3,737,267 15%	-17,622,000 DIVERT DISP/TONNE	20,034,462 176,220 100			

EFFECTS ANALYSIS OF 3R COMMITMENTS

York

C-16

DIVERSION COSTS PER HOUSEHOLD

GROWTH 9%

	3R Capital	Annual Cost of Diversion	Residential Share of Annual Costs %	\$	Total Business Tax (\$000s)	Percent Business Tax
					61,333	
Existing	0	2,226,701	70%	1,558,691	668	1%
Committed	2,785,100	2,660,676	70%	1,862,473	798	1%
Dir Cost A	2,785,100	2,614,682	70%	1,830,277	784	1%
Dir Cost B	2,785,100	9,114,682	70%	6,380,277	784	1%
Expanded	10,000,000	4,411,676	70%	3,088,173	1,324	2%
Wet/dry	45,000,000	16,009,088	70%	11,206,362	4,803	7%
Mixed a	57,785,100	23,598,462	70%	16,518,923	7,080	11%
Mixed b	57,785,100	20,034,462	70%	14,024,123	6,010	9%

	Existing Residential Costs	Cost of Commitment	Total Future Residential Costs	Total Future Households	Costs Per Household Future	Existing	Percent Change
Existing	0	1,558,691	1,558,691	225,620	0	10	0%
Committed	1,558,691	303,782	2,640,705	225,620	12	10	13%
Dir Cost A	1,558,691	271,586	2,608,509	225,620	12	10	12%
Dir Cost B	1,558,691	4,821,586	7,158,509	225,620	32	10	206%
Expanded	1,558,691	1,529,482	3,866,405	225,620	17	10	65%
Wet/dry	1,558,691	9,647,671	11,984,594	225,620	53	10	413%
Mixed a	1,558,691	14,960,232	17,297,155	225,620	77	10	640%
Mixed b	1,558,691	12,465,432	14,802,355	225,620	66	10	533%

Note: Household growth is used to show the effect of property assessment growth, but commercial/industrial assessment growth will not change the taxation split in the future. Moreover, new household growth will decrease the existing household cost for diversion, while future household growth beyond the period shown here, but still serviced by the committed capital is not included in the analysis.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

York

MUNICIPAL TAXATION PER HOUSEHOLD

C-17

	Total Municipal Taxation (\$000)	Existing Cost of Diversion (\$000)	Annual Cost of Commitment (\$000)	Existing Diversion Cost as a Percent of Total Taxation	Future Diversion Cost as a Percent of Total Taxation
Existing	207,220	0	2,227	0%	1%
Committed	207,220	1,559	2,661	1%	2%
Dir Cost A	207,220	1,559	2,615	1%	2%
Dir Cost B	207,220	1,559	9,115	1%	5%
Expanded	207,220	1,559	4,412	1%	3%
Wet/dry	207,220	1,559	16,009	1%	8%
Mixed a	207,220	1,559	23,598	1%	12%
Mixed b	207,220	1,559	20,034	1%	10%

	Total Municipal Taxation Per Hshold	Cost of Diversion Commitment Per Hshold	Percent Increase in Household Taxation
Existing	1,040	10	1%
Committed	1,040	12	1%
Dir Cost A	1,040	12	1%
Dir Cost B	1,040	32	3%
Expanded	1,040	17	2%
Wet/dry	1,040	53	5%
Mixed a	1,040	77	7%
Mixed b	1,040	66	6%

Note: If household growth, i.e. residential property assessment, is also taken into account, changes to household taxation resulting from diversion costs in Durham and York, and Halton would be negative.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

York

MUNICIPAL DEBT

C-18

	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing	39,212	0	0%
Committed	39,212	2,785	7%
Dir Cost A	39,212	2,785	7%
Dir Cost B	39,212	2,785	7%
Expanded	39,212	10,000	26%
Wet/dry	39,212	45,000	115%
Mixed a	39,212	57,785	147%
Mixed b	39,212	57,785	147%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

York

DEBT PAYMENTS

C-19

	Existing Debt Charges (\$000)	Existing Expenditures (\$000)	Percent Existing Debt Charges / Expenditures	
Existing	9,183	438,044	2.1%	
Committed	9,183	438,044	2.1%	
Dir Cost A	9,183	438,044	2.1%	
Dir Cost B	9,183	438,044	2.1%	
Expanded	9,183	438,044	2.1%	
Wet/dry	9,183	438,044	2.1%	
Mixed a	9,183	438,044	2.1%	
Mixed b	9,183	438,044	2.1%	
	Future Commitment D-Charges	Future Debt Charges Committed Plus Existing	Percent Future Debt Charges to Expenditures	Increase
Existing	0	9,183	2.1%	0.0%
Committed	434	9,617	2.2%	0.1%
Dir Cost A	434	9,617	2.2%	0.1%
Dir Cost B	434	9,617	2.2%	0.1%
Expanded	1,558	10,741	2.5%	0.4%
Wet/dry	7,012	16,195	3.7%	1.6%
Mixed a	9,004	18,187	4.2%	2.1%
Mixed b	9,004	18,187	4.2%	2.1%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

York

DEBT CAPACITY

C-20

	Existing Total Available Debt Capacity	Existing Debt	Current Remaining Debt Capacity	Percent Remaining	Committed Diversion	Percent Capacity Remaining After Committed
Existing	340,768	39,212	301,556	88%	0	88%
Committed	340,768	39,212	301,556	88%	2,785	88%
Dir Cost A	340,768	39,212	301,556	88%	2,785	88%
Dir Cost B	340,768	39,212	301,556	88%	2,785	88%
Expanded	340,768	39,212	301,556	88%	10,000	86%
Wet/dry	340,768	39,212	301,556	88%	45,000	75%
Mixed a	340,768	39,212	301,556	88%	57,785	72%
Mixed b	340,768	39,212	301,556	88%	57,785	72%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

York

FUTURE GTA HOUSEHOLDS

C-21

	1991 Households	New Households	Total Future Households	Percent Increase
Existing	150,485	75,135	225,620	50%
Committed	150,485	75,135	225,620	50%
Dir Cost A	150,485	75,135	225,620	50%
Dir Cost B	150,485	75,135	225,620	50%
Expanded	150,485	75,135	225,620	50%
Wet/dry	150,485	75,135	225,620	50%
Mixed a	150,485	75,135	225,620	50%
Mixed b	150,485	75,135	225,620	50%

Source: Hardy Stevenson and Associates

REGION OF PEEL

**MOE 3Rs ANALYSIS
MUNICIPAL FINANCE COMPONENT**

RESIDENTIAL SYSTEMS

C-22

PEEL

	Gross Capital Costs (buildings, vehicles equipment, etc.)	Capital Funding Sources	Annual Operating Cost Estimates (Labour, Overhead, Maint., Repair, etc.)	Added Operating Overhead Costs	Potential Annual Operating Cost Savings	Net Annual Levy (incl Annualized Capital Cost)
Existing			6,648,006 DIV RT 20%	2,000,000 30%	-5,080,000 DIVERT 50,800 DISP/TONN 100	3,568,006
Committed	90,300,000 DEPOTS MRF COMP	0	7,902,506 DIV RT 25%	2,370,752 30%	-7,620,000 DIVERT 76,200 DISP/TONN 100	16,723,812
Direct Cost A	90,300,000 DEPOTS MRF, COMP	0	15,449,552 DIV RT 46%	3,089,910 20%	-14,020,800 DIVERT 140,208 DISP/TONN 100	18,589,217
Direct Cost A	90,300,000 DEPOTS MRF, COMP	0	15,449,552 DIV RT 46%	3,089,910 20%	-4,020,800 DIVERT 140,208 DISP/TONN 100	28,589,217
Expanded Blue	90,300,000 DEPOTS MRF, COMP	0	16,147,398 DIV RT 48%	3,229,480 20%	-14,630,400 DIVERT 146,304 DISP/TONN 100	18,817,032
Wet / Dry	100,300,000 MRF, COMP & DEPOT INT CAPTL 11	10,030,000 Reserve	20,599,969 DIV RT 65%	3,089,995 15%	-19,812,000 DIVERT 198,120 DISP/TONN 100	17,943,844
Mixed Waste a	130,000,000 FAC COMP	39,000,000 Reserve	30,491,730 DIV RT 66%	4,573,760 15%	-20,116,800 DIVERT 201,168 DISP/TONN 100	29,128,318
Mixed Waste b	150,000,000	45,000,000 Reserve	30,491,730 DIV RT 89%	4,573,760 15%	-27,127,200 DIVERT 271,272 DISP/TONN 100	24,299,399

EFFECTS ANALYSIS OF 3R COMMITMENTS

PEEL

C-23

DIVERSION COSTS PER HOUSEHOLD

GROWTH 30%

	3R Capital	Annual Cost of Diversion	Residential Share of Annual Costs %	\$	Total Business Tax (\$000s)	Percent Business Tax
					124,809	
Existing	0	3,568,006	51%	1,819,683	1,748	1%
Committed	90,300,000	16,723,812	51%	8,529,144	8,195	5%
Dir Cost A	90,300,000	18,589,217	51%	9,480,500	9,109	6%
Dir Cost B	90,300,000	28,589,217	51%	14,580,500	9,220	6%
Expanded	90,300,000	18,817,032	51%	9,596,686	9,220	6%
Wet/dry	90,270,000	17,943,844	51%	9,151,360	8,792	5%
Mixed a	91,000,000	29,128,318	51%	14,855,442	14,273	9%
Mixed b	105,000,000	24,299,399	51%	12,392,693	11,907	7%

	Existing Residential Costs	Cost of Commitment	Total Future Residential Costs	Total Future Households	Costs Per Household Future	Existing	Percent Change
Existing	0	1,819,683	1,819,683	332,295	0	8	0%
Committed	1,819,683	6,709,461	9,342,245	332,295	28	8	255%
Dir Cost A	1,819,683	7,660,818	10,293,602	332,295	31	8	291%
Dir Cost B	1,819,683	12,760,818	15,393,602	332,295	46	8	485%
Expanded	1,819,683	7,777,003	10,409,787	332,295	31	8	295%
Wet/dry	1,819,683	7,331,677	9,964,462	332,295	30	8	278%
Mixed a	1,819,683	13,035,759	15,668,543	332,295	47	8	495%
Mixed b	1,819,683	10,573,011	13,205,795	332,295	40	8	402%

Note: Household growth is used to show the effect of property assessment growth, but commercial/industrial assessment growth will not change the taxation split in the future. Moreover, new household growth will decrease the existing household cost for diversion, while future household growth beyond the period shown here, but still serviced by the committed capital is not included in the analysis.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

PEEL

MUNICIPAL TAXATION PER HOUSEHOLD

C-24

	Total Municipal Taxation (\$000)	Existing Cost of Diversion (\$000)	Annual Cost of Commitment (\$000)	Existing Diversion Cost as a Percent of Total Taxation	Future Diversion Cost as a Percent of Total Taxation
Existing	334,661	0	3,568	0%	1%
Committed	334,661	1,820	16,724	1%	6%
Dir Cost A	334,661	1,820	18,589	1%	6%
Dir Cost B	334,661	1,820	28,589	1%	9%
Expanded	334,661	1,820	18,817	1%	6%
Wet/dry	334,661	1,820	17,944	1%	6%
Mixed a	334,661	1,820	29,128	1%	9%
Mixed b	334,661	1,820	24,299	1%	8%

	Total Municipal Taxation Per Hshold	Cost of Diversion Commitment Per Hshold	Percent Increase in Household Taxation
Existing	943	8	1%
Committed	943	28	3%
Dir Cost A	943	31	3%
Dir Cost B	943	46	5%
Expanded	943	31	3%
Wet/dry	943	30	3%
Mixed a	943	47	5%
Mixed b	943	40	4%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

PEEL

MUNICIPAL DEBT

C-25

	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing	107,801	0	0%
Committed	107,801	90,300	84%
Dir Cost A	107,801	90,300	84%
Dir Cost B	107,801	90,300	84%
Expanded	107,801	90,300	84%
Wet/dry	107,801	90,270	84%
Mixed a	107,801	91,000	84%
Mixed b	107,801	105,000	97%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

PEEL

DEBT PAYMENTS

C-26

	Existing Debt Charges (\$000)	Existing Expenditures (\$000)	Percent Existing Debt Charges / Expenditures	
Existing	38,951	754,243	5.2%	
Committed	38,951	754,243	5.2%	
Dir Cost A	38,951	754,243	5.2%	
Dir Cost B	38,951	754,243	5.2%	
Expanded	38,951	754,243	5.2%	
Wet/dry	38,951	754,243	5.2%	
Mixed a	38,951	754,243	5.2%	
Mixed b	38,951	754,243	5.2%	
	Future Commitment D-Charges	Future Debt Charges Committed Plus Existing	Percent Future Debt Charges to Expenditures	Increase
Existing	0	38,951	5.2%	0.0%
Committed	14,071	53,022	7.0%	1.9%
Dir Cost A	14,071	53,022	7.0%	1.9%
Dir Cost B	14,071	53,022	7.0%	1.9%
Expanded	14,071	53,022	7.0%	1.9%
Wet/dry	14,066	53,017	7.0%	1.9%
Mixed a	14,180	53,131	7.0%	1.9%
Mixed b	16,361	55,312	7.3%	2.2%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS

PEEL

DEBT CAPACITY

C-27

	Existing Total Available Debt Capacity	Existing Debt	Current Remaining Debt Capacity	Percent Remaining	Committed Diversion	Percent Capacity Remaining After Committed
Existing	586,748	107,801	478,947	82%	0	82%
Committed	586,748	107,801	478,947	82%	90,300	66%
Dir Cost A	586,748	107,801	478,947	82%	90,300	66%
Dir Cost B	586,748	107,801	478,947	82%	90,300	66%
Expanded	586,748	107,801	478,947	82%	90,300	66%
Wet/dry	586,748	107,801	478,947	82%	90,270	66%
Mixed a	586,748	107,801	478,947	82%	91,000	66%
Mixed b	586,748	107,801	478,947	82%	105,000	64%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R COMMITMENTS**PEEL****FUTURE GTA HOUSEHOLDS****C-28**

	1991 Households	New Households	Total Future Households	Percent Increase
Existing	229,670	102,625	332,295	45%
Committed	229,670	102,625	332,295	45%
Dir Cost A	229,670	102,625	332,295	45%
Dir Cost B	229,670	102,625	332,295	45%
Expanded	229,670	102,625	332,295	45%
Wet/dry	229,670	102,625	332,295	45%
Mixed a	229,670	102,625	332,295	45%
Mixed b	229,670	102,625	332,295	45%

Source: Hardy Stevenson and Associates

SCHEDULE D:
EFFECTS TABLES

REGION OF DURHAM

SYSTEM NET EFFECTS TABLE

Municipality: DURHAM REGION

Criteria	Indicator System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
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Potential for
Impact on
Local
Taxpayers

Total increase in the
net general municipal
levy

Total Municipal Taxation
-- \$189 million

See Impact on Provincial Treasury

Existing

Annual Cost
-- \$2,094,865

Annual Cost
-- \$2,094,865

Percent -- 1.1%

Percent -- 1.1%

Existing Committed

Annual Cost
-- \$2,608,692

Annual Cost
-- \$2,608,692

Percent -- 1.3%

Percent -- 1.3%

Direct Cost A

Annual Cost
-- \$2,008,381

Annual Cost
-- \$2,008,381

Percent -- 1.1%

Percent -- 1.1%

Direct Cost B

Annual Cost
-- \$5,511,435

Annual Cost
-- \$5,511,435

Percent -- 2.9%

Percent -- 2.9%

SYSTEM NET EFFECTS TABLE

Municipality: DURHAM REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
	Expanded Blue Box		Annual Cost -- \$3,746,534		Annual Cost -- \$3,746,534	
			Percent -- 1.9%		Percent -- 1.9%	
			Annual Cost -- \$8,245,746		Annual Cost -- \$8,245,746	
	Wet Dry		Percent -- 4.3%		Percent -- 4.3%	
			Annual Cost -- \$10,434,455		Annual Cost -- \$10,434,455	
			Percent -- 5.5%		Percent -- 5.5%	
	Mixed Waste A		Annual Cost -- \$6,984,455		Annual Cost -- \$6,984,455	
			Percent -- 3.6%		Percent -- 3.6%	
	Mixed Waste B					Existing, committed direct cost and expanded blue box -- low impact. Wet/dry & mixed waste -- medium impact

Municipality: DURHAM REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
Net general municipal levy, adjusted for commercial/industrial property assessment, expressed on a per household basis.	Existing		Municipal taxation per household -- \$1,032		Municipal taxation per household --\$1,032	
			Cost per household -- \$9.00		Cost per household -- \$9.00	
			Percent -- 0.8%		Percent --0.8%	
	Existing Committed		Cost per household -- \$11.00		Cost per household -- \$11.00	
			Percent -- 1.1%		Percent --1.1%	
	Direct Cost A		Cost per household -- \$9.00		Cost per household -- \$9.00	
			Percent -- 0.8%		Percent -- 0.8%	
Direct Cost B			Cost per household -- \$19.00		Cost per household -- \$19.00	
			Percent -- 1.8%		Percent -- 1.8%	

SYSTEM NET EFFECTS TABLE

D-4

Municipality: DURHAM REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
	Expanded Blue Box		Cost per household -- \$14.00		Cost per household -- \$14.00	
			Percent -- 1.4%		Percent -- 1.4%	
	Wet/Dry		Cost per household -- \$27.00		Cost per household -- \$27.00	
			Percent -- 2.6%		Percent -- 2.6%	
	Mixed Waste A		Cost per household -- \$33.00		Cost per household -- \$33.00	
			Percent -- 3.2%		Percent -- 3.2%	
	Mixed Waste B		Cost per household --\$23.00		Cost per household -- \$23.00	
			Percent -- 2.2%		Percent -- 2.2%	
						All systems nominal to low

Municipality: DURHAM REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Potential for Impact on the Debt Burden of the municipality						
	Amount of Debenture debt					
	Existing		Existing debt -- \$35.3 million Debt related to diversion -- \$0 Percent -- 0%	See impact on Provincial Treasury	Debt related to diversion -- \$0 Percent -- 0%	
	Existing Committed		Debt related to diversion -- \$3.8 million Percent -- 10.8%		Debt related to diversion -- \$3.8 million Percent -- 10.8%	
	Direct Cost A & B (Same for both systems)		Debt related to diversion -- \$3.8 million Percent -- 10.8%		Debt related to diversion -- \$3.8 million Percent -- 10.8%	
	Expanded Blue Box		Debt related to diversion -- \$9.0 million		Debt related to diversion -- \$9.0 million	

SYSTEM NET EFFECTS TABLE

D-6

Municipality: DURHAM REGION

Criteria	Indicator	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Wet/Dry		Percent -- 25.5%		Percent -- 25.5%	
		Debt related to diversion -- \$39.5 million		Debt related to -- \$39.5 million	
		Percent -- 111.8%		Percent -- 111.8%	
Mixed Waste A		Debt related to diversion -- \$50.0 million		Debt related to diversion -- \$50.0 million	
		Percent -- 141.6%		Percent -- 141.6%	
		Debt related to diversion -- \$50.0 million		Debt related to diversion -- \$50.0 million	
Mixed Waste B		Percent -- 141.6%		Percent -- 141.6%	
					Existing no effect.
					Committed, direct cost and expanded blue box nominal to moderate effect.
					Wet/dry and mixed waste high impact.

Municipality: DURHAM REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria	
Annual debt payments as a percent of expenditures (OMB/ MMA guideline)	Existing		Existing Debt Charges -- \$10.9 million				
			Existing Operating Expenditure -- \$475.7 million				
			Existing Debt Charges as a % of Exp'ds -- 2.3%				
			Diversion Debt Charges -- \$0		Debt Charges -- \$0		
			Percent -- 0%		Percent -- 0%		
	Existing Committed						
	Direct Cost A & B (Same for both systems)			Diversion Debt Charges -- \$601,000		Debt Charges -- \$601,000	
				Percent -- 0.1%		Percent -- 0.1%	
				Diversion Debt Charges -- \$600,000		Debt Charges -- \$600,000	
				Percent -- 0.1%		Percent -- 0.1%	

SYSTEM NET EFFECTS TABLE

D-8

Municipality: DURHAM REGION

Criteria Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Expanded Blue Box					
		Diversion Debt Charges		Debt Charges	
		-- \$1,402,000		-- \$1,402,000	
		Percent -- 0.3%		Percent -- 0.3%	
	Wet/Dry	Diversion Debt Charges		Debt Charges	
		-- \$6,155,000		-- \$6,155,000	
		Percent -- 1.3%		Percent -- 1.3%	
	Mixed Waste A	Diversion Debt Charges		Debt Charges	
		-- \$7,791,000		-- \$7,791,000	
		Percent -- 1.6%		Percent -- 1.6%	
	Mixed Waste B	Diversion Debt Charges		Debt Charges	
		-- \$7,791,000		-- \$7,791,000	
		Percent --1.6%		Percent --1.6%	

Existing no effect.
Committed, direct cost
and expanded blue box
nominal to moderate
effect.
Wet/dry and mixed
waste high impact.

Municipality: DURHAM REGION

Criteria	Municipal Finance Indicator	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
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Available debt capacity
(OMB/MMA guideline)

Existing

Existing Debt Capacity
-- \$335 millionDebt Related to Diversion
-- \$0

Percent of capacity -- 0%

Debt Related to Diversion
--\$0

Percent of capacity -- 0%

Existing Committed

Debt Related to Diversion
-- \$3.8 millionDebt Related to Diversion
--\$3.8 million

Percent of capacity -- 1.1%

Percent of capacity -- 1.1%

Direct Cost A & B
(Same for both
systems)Debt Related to Diversion
-- \$3.8 millionDebt related to Diversion
-- \$3.8 million

Percent of capacity -- 1.1%

Percent of capacity -- 1.1%

SYSTEM NET EFFECTS TABLE
Municipality: DURHAM REGION

D-10

Criteria Indicator System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
Expanded Blue Box	Debt Related to Diversion -- \$3.8 million		Debt Related to Diversion -- \$3.8 million	
	Percent of capacity -- 1.1%		Percent of capacity --1.1%	
Wet/Dry	Debt Related to Diversion -- \$39.5 million		Debt Related to Diversion -- \$39.5 million	
	Percent of capacity -- 11.8%		Percent of capacity --11.8%	
Mixed Waste A	Debt Related to Diversion -- \$50.0 million		Debt Related to Diversion -- \$50.0 million	
	Percent of capacity -- 14.9%		Percent of capacity -- 14.9%	
Mixed Waste B	Debt Related to Diversion -- \$50.0 million		Debt Related to Diversion -- \$50.0 million	
	Percent of capacity --14.9%		Percent of capacity --14.9%	

Existing no effect.

SYSTEM NET EFFECTS TABLE

Municipality: DURHAM REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Potential for Impact on Municipal Reserve Funds						Committed, direct cost and expanded blue box nominal to moderate effect. Wet/dry and mixed waste high impact.
Total amount of reserve funds						
	Existing		Existing reserves & reserve funds -- \$199 million			
			NOT AFFECTED BY DIVERSION			
	Existing Committed		NOT AFFECTED BY DIVERSION			
	Direct Cost A		NOT AFFECTED BY DIVERSION			
	Direct Cost B		\$1.5 million addition to reserves -- 0.7% addition			

SYSTEM NET EFFECTS TABLE

D-12

Municipality: DURHAM REGION

Criteria

System
Net Effects
by CriteriaMunicipal Finance
Effect

System Net Effects

Mitigation/
Enhancement

Expanded Blue Box

NOT AFFECTED BY DIVERSION

Wet/Dry

NOT AFFECTED BY DIVERSION

Mixed Waste A

NOT AFFECTED BY DIVERSION

Mixed Waste B

NOT AFFECTED BY DIVERSION

Criteria not affected
by diversion except for
direct cost BReserves per
household

Existing

Existing reserves per
household -- \$1,460

NOT AFFECTED BY DIVERSION

Existing Committed

NOT AFFECTED BY DIVERSION

Direct Cost A

NOT AFFECTED BY DIVERSION

SYSTEM NET EFFECTS TABLE

Municipality: DURHAM REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
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Direct Cost B
\$11.03 per household
-- 0.7% addition

Expanded Blue Box
NOT AFFECTED BY DIVERSION

Wet/Dry
NOT AFFECTED BY DIVERSION

Mixed Waste A
NOT AFFECTED BY DIVERSION

Mixed Waste B
NOT AFFECTED BY DIVERSION

Reserves as a Percent of Expenditures
Existing
Reserves equal 42% of expenditures

Existing Committed
NOT AFFECTED BY DIVERSION

NOT AFFECTED BY DIVERSION

Direct Cost A
NOT AFFECTED BY DIVERSION

SYSTEM NET EFFECTS TABLE

D-14

Municipality: DURHAM REGION

Criteria

Indicator

System

Municipal Finance

Effect

Mitigation/
Enhancement

System Net Effects

System
Net Effects
by Criteria

Direct Cost B

0.3% of operating expenditures

Expanded Blue Box

NOT AFFECTED BY DIVERSION

Wet/Dry

NOT AFFECTED BY DIVERSION

Mixed Waste A

NOT AFFECTED BY DIVERSION

Mixed Waste B

NOT AFFECTED BY DIVERSION

Criteria not affected by
diversion systems
except for
Direct Cost BPotential for
Impact on the
level of
municipal
serviceTotal municipal wages,
salaries, materials &
contract expenditures
per household

Municipality: DURHAM REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
		Existing	Operating expenditures equal \$3,490 per household			
			SERVICE LEVELS NOT AFFECTED BY DIVERSION			
		Existing Committed	SERVICE LEVELS NOT AFFECTED BY DIVERSION			
			SERVICE LEVELS NOT AFFECTED BY DIVERSION			
		Direct Cost A & B	SERVICE LEVELS NOT AFFECTED BY DIVERSION			
			SERVICE LEVELS NOT AFFECTED BY DIVERSION			
		Expanded Blue Box	SERVICE LEVELS NOT AFFECTED BY DIVERSION			
			SERVICE LEVELS NOT AFFECTED BY DIVERSION			
		Wet/Dry	SERVICE LEVELS NOT AFFECTED BY DIVERSION			
			SERVICE LEVELS NOT AFFECTED BY DIVERSION			
		Mixed Waste A	SERVICE LEVELS NOT AFFECTED BY DIVERSION			
			SERVICE LEVELS NOT AFFECTED BY DIVERSION			
		Mixed Waste B	SERVICE LEVELS			
			SERVICE LEVELS			

SYSTEM NET EFFECTS TABLE

D-16

Municipality: DURHAM REGION

Criteria

System
Net Effects
by Criteria

Indicator

System

Municipal Finance
EffectMitigation/
Enhancement

System Net Effects

NOT AFFECTED BY DIVERSION

Criteria not affected by
diversionCurrent expenditures
by department per
household

Existing

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Existing Committed

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Direct Cost A & B

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Expanded Blue Box

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Wet/Dry

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

SYSTEM NET EFFECTS TABLE

D-18

Municipality: DURHAM REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Potential for Impact on Private Sector Industries						
	Amount of private sector funding					
	Existing			NOT AFFECTED BY DIVERSION		
	Existing Committed			NOT AFFECTED BY DIVERSION		
	Direct Cost A & B			NOT AFFECTED BY DIVERSION		
	Expanded Blue Box			NOT AFFECTED BY DIVERSION		
	Wet/Dry			NOT AFFECTED BY DIVERSION		
	Mixed Waste A			NOT AFFECTED BY DIVERSION		
	Mixed Waste B			NOT AFFECTED BY DIVERSION		
	Amount of private sector costs					

Municipality: DURHAM REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
	Existing		NOT AFFECTED BY DIVERSION			
	Existing Committed		NOT AFFECTED BY DIVERSION			
	Direct Cost A & B		NOT AFFECTED BY DIVERSION			
	Expanded Blue Box		NOT AFFECTED BY DIVERSION			
	Wet/Dry		NOT AFFECTED BY DIVERSION			
	Mixed Waste A		NOT AFFECTED BY DIVERSION			
	Mixed Waste B		NOT AFFECTED BY DIVERSION			
	Amount of costs passed on through higher prices					
	Existing		NOT AFFECTED BY DIVERSION			
	Existing Committed		NOT AFFECTED BY DIVERSION			

SYSTEM NET EFFECTS TABLE

Municipality: DURHAM REGION

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Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Amount of private sector costs financed through taxes, incentives, economics, etc.		Direct Cost A & B	NOT AFFECTED BY DIVERSION			
		Expanded Blue Box	NOT AFFECTED BY DIVERSION			
		Wet/Dry	NOT AFFECTED BY DIVERSION			
		Mixed Waste A	NOT AFFECTED BY DIVERSION			
		Mixed Waste B	NOT AFFECTED BY DIVERSION			
Existing	Total municipal taxes paid by the commercial/ industrial sector -- \$57.3 million					
	Taxes Related to Diversion -- \$859,000					Taxes Related to Diversion -- \$859,000

SYSTEM NET EFFECTS TABLE

Municipality: DURHAM REGION

Criteria Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Existing Committed		Percent -- 1.4%		Percent -- 1.4%	
		Taxes Related to Diversion -- \$1,070,000		Taxes Related to Diversion -- \$1,070,000	
		Percent -- 1.9%		Percent -- 1.9%	
		Taxes Related to Diversion -- \$823,000		Taxes Related to Diversion -- \$823,000	
Direct Cost A & B		Percent -- 1.4%		Percent -- 1.4%	
		Taxes Related to Diversion -- \$1,536,000		Taxes Related to Diversion -- \$1,536,000	
		Percent -- 2.6%		Percent -- 2.6%	
		Taxes Related to Diversion -- \$3,381,000		Taxes Related to Diversion -- \$3,381,000	
Expanded Blue Box		Percent -- 5.9%		Percent -- 5.9%	
		Taxes Related to Diversion -- \$4,278,500		Taxes Related to Diversion -- \$4,278,500	
		Percent -- 7.4%		Percent -- 7.4%	
Wet/Dry					
Mixed Waste A					

SYSTEM NET EFFECTS TABLE

D-22

Municipality: DURHAM REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Mixed Waste B						
			Taxes Related to Diversion -- \$2,864,000		Taxes Related to Diversion -- \$2,864,000	
			Percent -- 5.0%		Percent -- 5.0%	Existing, committed, direct cost and expanded blue box -- low effect. Wet/dry & mixed waste medium effect.

METROPOLITAN TORONTO

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Potential for Impact on Local Taxpayers						
	Total increase in the net general municipal levy		Total Municipal Taxation -- \$1.7 million	See Impact on Provincial Treasury		
	Existing		Annual Cost -- \$23,747,137 Percent -- 1.4%		Annual Cost -- \$23,747,137 Percent -- 1.4%	
	Existing Committed		Annual Cost -- \$42,362,618 Percent -- 2.5%		Annual Cost -- \$42,362,618 Percent -- 2.5%	
	Direct Cost A		Annual Cost -- \$57,773,605 Percent -- 3.3%		Annual Cost -- \$57,773,605 Percent -- 3.3%	
	Direct Cost B		Annual Cost -- \$102,773,605 Percent -- 6.0%		Annual Cost -- \$102,773,605 Percent -- 6.0%	
	Expanded Blue Box		Annual Cost -- \$59,317,648		Annual Cost -- \$59,317,648	

SYSTEM NET EFFECTS TABLE

M-2

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
	Wet Dry		Percent -- 3.4%		Percent -- 3.4%	
			Annual Cost -- \$43,311,565		Annual Cost -- \$43,311,565	
	Mixed Waste A		Percent -- 2.5%		Percent -- 2.5%	
			Annual Cost -- \$138,071,300		Annual Cost -- \$138,071,300	
	Mixed Waste B		Percent -- 8.0%		Percent -- 8.0%	
			Annual Cost -- \$116,109,288		Annual Cost -- \$116,109,288	
			Percent -- 6.9%		Percent -- 6.9%	Existing, committed and wet/dry -- low impact direct cost and expanded blue box Wet/dry & mixed waste -- medium impact

Net general municipal
levy, adjusted for
commercial/industrial
property assessment,
expressed on a per
household basis.

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
	Existing		Municipal taxation per household -- \$1,016		Municipal taxation per household -- \$1,016	
			Cost per household -- \$13.00		Cost per household -- \$13.00	
			Percent -- 1.3%		Percent -- 1.3%	
	Existing Committed		Cost per household -- \$23.00		Cost per household -- \$23.00	
			Percent -- 2.2%		Percent --2.2%	
	Direct Cost A		Cost per household -- \$31.00		Cost per household -- \$31.00	
			Percent -- 3.1%		Percent -- 3.1%	
	Direct Cost B		Cost per household -- \$54.00		Cost per household -- \$54.00	
			Percent -- 5.3%		Percent -- 5.3%	

SYSTEM NET EFFECTS TABLE

M-4

Municipality: METROPOLITAN TORONTO

Criteria Indicator System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
Expanded Blue Box				
	Cost per household -- \$31.00		Cost per household -- \$31.00	
	Percent -- 3.1%		Percent -- 3.1%	
Wet/Dry				
	Cost per household -- \$23.00		Cost per household -- \$23.00	
	Percent -- 2.3%		Percent -- 2.3%	
Mixed Waste A				
	Cost per household -- \$72.00		Cost per household -- \$72.00	
	Percent -- 7.1%		Percent -- 7.1%	
Mixed Waste B				
	Cost per household -- \$60.00		Cost per household -- \$60.00	
	Percent -- 5.9%		Percent -- 5.9%	
				Existing, committed, wet/dry -- low impact

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
Potential for Impact on the Debt Burden of the municipality	Amount of Debenture debt	Existing	Existing debt -- \$69.7 million See impact on Provincial Treasury			direct cost expanded blue box and mixed waste A -- medium impact, mixed waste B - high impact
			Debt related to diversion -- \$0			
			Percent -- 0%			
			Debt related to diversion -- \$135.7 million			
	Existing Committed		Percent -- 19.5%			Percent -- 19.5%
			Debt related to diversion -- \$135.7 million			
	Direct Cost A & B		Debt related to diversion			Debt related to diversion

SYSTEM NET EFFECTS TABLE

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Municipality: METROPOLITAN TORONTO

Criteria Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
	Expanded Blue Box	-- \$135.7 million		-- \$135.7 million	
		Percent -- 19.5%		Percent -- 19.5%	
		Debt related to diversion -- \$135.7 million		Debt related to diversion -- \$135.7 million	
		Percent -- 19.5%		Percent -- 19.5%	
	Wet/Dry	Debt related to diversion -- \$166.7 million		Debt related to -- \$166.7 million	
		Percent -- 23.9%		Percent -- 23.9%	
		Debt related to diversion -- \$241.0 million		Debt related to diversion -- \$241.0 million	
		Percent -- 34.6%		Percent -- 34.6%	
	Mixed Waste A	Debt related to diversion -- \$265.9 million		Debt related to diversion -- \$265.9 million	
		Percent -- 38.1%		Percent -- 38.1%	
	Mixed Waste B	Debt related to diversion -- \$265.9 million		Debt related to diversion -- \$265.9 million	
		Percent -- 38.1%		Percent -- 38.1%	
					Existing no effect.
					All other systems moderate

Municipality: METROPOLITAN TORONTO

Criteria Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
Annual debt payments as a percent of expenditures (OMB/MMA guideline)					
	Existing	Existing Debt Charges -- \$193 million			effect.
		Existing Operating Expenditure -- \$4.5 billion			
		Existing Debt Charges as a % of Exp'ds -- 4.3%			
		Diversion Debt Charges -- \$0		Debt Charges -- \$0	
		Percent -- 0%		Percent -- 0%	
Existing Committed					
		Diversion Debt Charges -- \$21.1 million		Debt Charges -- \$21.1 million	
		Percent -- 0.5%		Percent -- 0.5%	

SYSTEM NET EFFECTS TABLE

M-8

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Direct Cost A & B						
			Diversion Debt Charges -- \$21.1 million		Debt Charges -- \$21.1 million	
			Percent -- 0.5%		Percent -- 0.5%	
Expanded Blue Box						
			Diversion Debt Charges -- \$21,100,000		Debt Charges -- \$21,100,000	
			Percent -- 0.4%		Percent -- 0.4%	
Wet/Dry						
			Diversion Debt Charges -- \$25,900,000		Debt Charges -- \$25,900,000	
			Percent -- 0.5%		Percent -- 0.5%	
Mixed Waste A						
			Diversion Debt Charges -- \$37,600,000		Debt Charges -- \$37,600,000	
			Percent -- 0.8%		Percent -- 0.8%	

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
		Mixed Waste B	Diversion Debt Charges -- \$41,400,000		Debt Charges -- \$41,400,000	
			Percent --0.9%		Percent --0.9%	Existing no effect. All other systems moderate effect.
		Existing	Existing Debt Capacity -- \$2.8 billion			
			Debt Related to Diversion -- \$0		Debt Related to Diversion --\$0	
			Percent of capacity -- 0%		Percent of capacity -- 0%	
		Existing Committed	Debt Related to Diversion -- \$135.7 million		Debt Related to Diversion --\$135.7 million	
			Percent of capacity -- 4.8%		Percent of capacity -- 4.8%	

SYSTEM NET EFFECTS TABLE

M-10

Municipality: METROPOLITAN TORONTO

Criteria Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Direct Cost A & B					
		Debt Related to Diversion -- \$135.7 million		Debt related to Diversion -- \$135.7 million	
		Percent of capacity -- 4.8%		Percent of capacity -- 4.8%	
Expanded Blue Box					
		Debt Related to Diversion -- \$135.7 million		Debt Related to Diversion -- \$135.7 million	
		Percent of capacity -- 4.8%		Percent of capacity --4.8%	
Wet/Dry					
		Debt Related to Diversion -- \$166.8 million		Debt Related to Diversion -- \$166.8 million	
		Percent of capacity -- 5.9%		Percent of capacity --5.9%	
Mixed Waste A					
		Debt Related to Diversion -- \$240.9 million		Debt Related to Diversion -- \$240.9 million	

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
			Percent of capacity -- 8.5%		Percent of capacity -- 8.5%	
		Mixed Waste B	Debt Related to Diversion -- \$265.9 million		Debt Related to Diversion -- \$265.9 million	
			Percent of capacity --9.4%		Percent of capacity --9.4%	
						Existing no effect. Committed, direct cost and expanded blue box nominal to moderate effect. Wet/dry and mixed waste high impact.

Potential for Impact on Municipal Reserve Funds

Total amount of reserve funds

Existing

Existing reserves & reserve funds -- \$986 million

NOT AFFECTED BY DIVERSION

SYSTEM NET EFFECTS TABLE

M-12

Municipality: METROPOLITAN TORONTO

Criteria Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Existing Committed					
				NOT AFFECTED BY DIVERSION	
Direct Cost A					
				NOT AFFECTED BY DIVERSION	
Direct Cost B					
				\$45 million additional	
				-- 4.6% of total	
Expanded Blue Box					
				NOT AFFECTED BY DIVERSION	
Wet/Dry					
				NOT AFFECTED BY DIVERSION	
Mixed Waste A					
				Reserve reduced by \$25.0 million	
				Percent -- 2.5%	
Mixed Waste B					

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
Reserves per household			Reserve reduced by \$50.0 million			Mixed waste nominal to moderate effect. All other systems no effect except for direct cost
			Percent -- 5.1%			
	Existing		Existing reserves per household -- \$1,115			
			NOT AFFECTED BY DIVERSION			
	Existing Committed					
	Direct Cost A					
	Direct Cost B					
			\$5.20 per household -- 0.5% additional			
	Expanded Blue Box					

SYSTEM NET EFFECTS TABLE

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Municipality: METROPOLITAN TORONTO

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
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NOT AFFECTED BY DIVERSION

Wet/Dry

NOT AFFECTED BY DIVERSION

Mixed Waste A

\$28.90 cost per household
-- 2.6% of total

Mixed Waste B

\$57.80 cost per household
-- 5.1% of total

Reserves as a Percent
of Expenditures

Existing

Reserves equal 22% of
expenditures

NOT AFFECTED BY DIVERSION

Existing Committed

NOT AFFECTED BY DIVERSION

Direct Cost A

NOT AFFECTED BY DIVERSION

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Potential for Impact on the level of municipal service	Total municipal wages, salaries, materials & contract expenditures	Direct Cost B	-- 0.9% additional			Direct cost positive impact mixed waste negative impact
		Expanded Blue Box	NOT AFFECTED BY DIVERSION			
		Wet/Dry	NOT AFFECTED BY DIVERSION			
		Mixed Waste A	-- 0.5% of total			
		Mixed Waste B	-- 1.0% of total			

SYSTEM NET EFFECTS TABLE

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Municipality: METROPOLITAN TORONTO

Criteria Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
	per household				
	Existing	Operating expenditures equal \$5,118 per household			
		SERVICE LEVELS NOT AFFECTED BY DIVERSION			
	Existing Committed				
		SERVICE LEVELS NOT AFFECTED BY DIVERSION			
	Direct Cost A & B				
		SERVICE LEVELS NOT AFFECTED BY DIVERSION			
	Expanded Blue Box				
		SERVICE LEVELS NOT AFFECTED BY DIVERSION			
	Wet/Dry				
		SERVICE LEVELS NOT AFFECTED BY DIVERSION			

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Current expenditures by department per household	Mixed Waste A		SERVICE LEVELS NOT AFFECTED BY DIVERSION		
	Mixed Waste B		SERVICE LEVELS NOT AFFECTED BY DIVERSION		Criteria not affected by diversion
	Existing		SERVICE LEVELS NOT AFFECTED BY DIVERSION		
Existing Committed			SERVICE LEVELS NOT AFFECTED BY DIVERSION		
	Direct Cost A & B		SERVICE LEVELS		

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Potential for Impact on Private Sector Industries	Amount of Provincial funding			Pending funding arrangements/ negotiations, the analysis was done in the absence of mitigation. However, a potential level of Provincial funding may approach 30% of capital costs.		Pending funding arrangements
	Amount of private sector funding					
	Existing			NOT AFFECTED BY DIVERSION		
	Existing Committed			NOT AFFECTED BY DIVERSION		
	Direct Cost A & B			NOT AFFECTED BY DIVERSION		
	Expanded Blue Box			NOT AFFECTED BY DIVERSION		

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
		Wet/Dry	NOT AFFECTED BY DIVERSION			
		Mixed Waste A	NOT AFFECTED BY DIVERSION			
		Mixed Waste B	NOT AFFECTED BY DIVERSION			
Amount of private sector costs						
		Existing	NOT AFFECTED BY DIVERSION			
		Existing Committed	NOT AFFECTED BY DIVERSION			
		Direct Cost A & B	NOT AFFECTED BY DIVERSION			
		Expanded Blue Box	NOT AFFECTED BY DIVERSION			
		Wet/Dry	NOT AFFECTED BY DIVERSION			
		Mixed Waste A	NOT AFFECTED BY DIVERSION			
		Mixed Waste B	NOT AFFECTED BY DIVERSION			

Municipality: METROPOLITAN TORONTO

Criteria

Indicator System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Amount of costs passed on through higher prices	Existing	NOT AFFECTED BY DIVERSION		
	Existing Committed	NOT AFFECTED BY DIVERSION		
	Direct Cost A & B	NOT AFFECTED BY DIVERSION		
	Expanded Blue Box	NOT AFFECTED BY DIVERSION		
	Wet/Dry	NOT AFFECTED BY DIVERSION		
Amount of private sector costs financed through taxes, incentives, economics, etc.	Mixed Waste A	NOT AFFECTED BY DIVERSION		
	Mixed Waste B	NOT AFFECTED BY DIVERSION		

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Existing			Total municipal taxes paid by the commercial/industrial sector -- \$89.7 million			
			Taxes Related to Diversion -- \$12,300,000		Taxes Related to Diversion -- \$12,300,000	
			Percent -- 1.3%		Percent -- 1.3%	
Existing Committed			Taxes Related to Diversion -- \$22,000,000		Taxes Related to Diversion -- \$22,000,000	
			Percent -- 2.5%		Percent -- 2.5%	
Direct Cost A & B			Taxes Related to Diversion -- \$30,000,000		Taxes Related to Diversion -- \$30,000,000	
			Percent -- 3.3%		Percent -- 3.3%	
Expanded Blue Box			Taxes Related to Diversion -- \$30,800,000		Taxes Related to Diversion -- \$30,800,000	
			Percent -- 3.4%		Percent -- 3.4%	

Municipality: METROPOLITAN TORONTO

Criteria	Indicator	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Wet/Dry		Taxes Related to Diversion -- \$22,500,000		Taxes Related to Diversion -- \$22,500,000	
		Percent -- 2.5%		Percent -- 2.5%	
Mixed Waste A		Taxes Related to Diversion -- \$71,800,000		Taxes Related to Diversion -- \$71,800,000	
		Percent -- 8.0%		Percent -- 8.0%	
Mixed Waste B		Taxes Related to Diversion -- \$60,400,000		Taxes Related to Diversion -- \$60,400,000	
		Percent -- 6.7%		Percent -- 6.7%	Existing, committed, and wet/dry -- low effect. direct cost and expanded blue box -- medium effect. Mixed waste high effect.

REGION OF YORK

SYSTEM NET EFFECTS TABLE
Municipality: YORK REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Potential for Impact on Local Taxpayers						
	Total increase in the net general municipal levy		Total Municipal Taxation -- \$207 million	See Impact on Provincial Treasury		
	Existing		Annual Cost -- \$2,226,701 Percent -- 1.1%		Annual Cost -- \$2,226,701 Percent -- 1.1%	
	Existing Committed		Annual Cost -- \$2,660,676 Percent -- 1.3%		Annual Cost -- \$2,660,676 Percent -- 1.3%	
	Direct Cost A		Annual Cost -- \$2,614,682 Percent -- 1.2%		Annual Cost -- \$2,614,682 Percent -- 1.2%	
	Direct Cost B		Annual Cost -- \$9,114,682 Percent -- 4.4%		Annual Cost -- \$9,114,682 Percent -- 4.4%	

SYSTEM NET EFFECTS TABLE

Municipality: YORK REGION

Criteria
Indicator System

System
Net Effects
by Criteria

Municipal Finance
Effect

Mitigation/
Enhancement

System Net Effects

Expanded Blue Box

Annual Cost
-- \$4,411,676

Annual Cost
-- \$4,411,676

Percent -- 2.1%

Percent -- 2.1%

Wet Dry

Annual Cost
-- \$16,009,088

Annual Cost
-- \$16,009,088

Percent -- 7.7%

Percent -- 7.7%

Mixed Waste A

Annual Cost
-- \$23,598,462

Annual Cost
-- \$23,598,462

Percent -- 11.4%

Percent -- 11.4%

Mixed Waste B

Annual Cost
-- \$20,034,462

Annual Cost
-- \$20,034,462

Percent -- 9.7%

Percent -- 9.7%

Existing, committed
d/c/rev/heut and
expanded
blue box -- low impact.
Wet/dry & mixed waste
d/c/add/rev
-- medium impact

Net general municipal
levy, adjusted for
commercial/industrial
property assessment,
expressed on a per
household basis.

Municipality: YORK REGION

Criteria

Indicator
SystemMunicipal Finance
EffectMitigation/
Enhancement

System Net Effects

System
Net Effects
by Criteria

Existing

Municipal taxation per
household -- \$1,040Municipal taxation per
household -- \$1,040Cost per
household -- \$10.00Cost per
household -- \$10.00

Percent -- 0.9%

Percent -- 0.9%

Existing Committed

Cost per
household -- \$12.00Cost per
household -- \$12.00

Percent -- 1.2%

Percent -- 1.2%

Direct Cost A

Cost per
household -- \$12.00Cost per
household -- \$12.00

Percent -- 1.2%

Percent -- 1.2%

Direct Cost B

Cost per
household -- \$32.00Cost per
household -- \$32.00

Percent -- 3.1%

Percent -- 3.1%

SYSTEM NET EFFECTS TABLE

Municipality: YORK REGION

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Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Expanded Blue Box						
			Cost per household -- \$17.00		Cost per household -- \$17.00	
			Percent -- 1.6%		Percent -- 1.6%	
Wet/Dry						
			Cost per household -- \$53.00		Cost per household -- \$53.00	
			Percent -- 5.1%		Percent -- 5.1%	
Mixed Waste A						
			Cost per household -- \$77.00		Cost per household -- \$77.00	
			Percent -- 7.4%		Percent -- 7.4%	
Mixed Waste B						
			Cost per household -- \$66.00		Cost per household -- \$66.00	
			Percent -- 6.3%		Percent -- 6.3%	
						Existing, committed, direct cost A and

Municipality: YORK REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Potential for Impact on the Debt Burden of the municipality						expanded blue box --low effect wet/dry, D/C B -- medium effect, mixed waste -- high
Amount of Debenture debt						
Existing			Existing debt -- \$39.2 million	See impact on Provincial Treasury		
			Debt related to diversion -- \$0		Debt related to diversion -- \$0	
			Percent -- 0%		Percent -- 0%	
Existing Committed			Debt related to diversion -- \$2.8 million		Debt related to diversion -- \$2.8 million	
			Percent -- 7.1%		Percent -- 7.1%	
Direct Cost A & B			Debt related to diversion -- \$2.8 million		Debt related to diversion -- \$2.8 million	

SYSTEM NET EFFECTS TABLE

Y-6

Municipality: YORK REGION

Criteria

Indicator

System

Municipal Finance
EffectMitigation/
Enhancement

System Net Effects

System
Net Effects
by
Criteria

Percent -- 7.1%

Percent --7.1%

Expanded Blue Box

Debt related to diversion
-- \$10.0 millionDebt related to diversion
-- \$10.0 million

Percent -- 25.5%

Percent -- 25.5%

Wet/Dry

Debt related to diversion
-- \$45.0 millionDebt related to
-- \$45.0 million

Percent -- 114.8%

Percent -- 114.8%

Mixed Waste A

Debt related to diversion
-- \$57.8 millionDebt related to diversion
-- \$57.8 million

Percent -- 147.4%

Percent -- 147.4%

Mixed Waste B

Debt related to diversion
-- \$57.8 millionDebt related to diversion
-- \$57.8 million

Percent -- 147.4%

Percent -- 147.4%

Existing no effect.
Committed, dir cost
and expanded blue
box nominal effect

SYSTEM NET EFFECTS TABLE

Municipality: YORK REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
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Wet/dry and mixed waste high impact.

Annual debt payments as a percent of expenditures (OMB/MMA guideline)

Existing	Existing Debt Charges	-- \$9.2 million				
	Existing Operating Expenditure	-- \$438.0 million				
	Existing Debt Charges as a % of Exp'ds	-- 2.1%				
	Debt Charges	-- \$0				
	Percent	-- 0%				
Existing Committed	Debt Charges	-- \$0				
	Percent	-- 0%				
	Debt Charges	-- \$434,000				
	Percent	-- 0.1%				

Municipality: YORK REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
		Direct Cost A & B				
			Diversion Debt Charges -- \$434,000		Debt Charges -- \$434,000	
			Percent -- 0.1%		Percent -- 0.1%	
		Expanded Blue Box				
			Diversion Debt Charges -- \$1,558,000		Debt Charges -- \$1,558,000	
			Percent -- 0.3%		Percent -- 0.3%	
		Wet/Dry				
			Diversion Debt Charges -- \$7,012,000		Debt Charges -- \$7,012,000	
			Percent -- 1.6%		Percent -- 1.6%	
		Mixed Waste A				
			Diversion Debt Charges -- \$9,004,000		Debt Charges -- \$9,004,000	
			Percent -- 2.1%		Percent -- 2.1%	
		Mixed Waste B				

Municipality: YORK REGION

Criteria

Indicator
System

Municipal Finance
Effect

Mitigation/
Enhancement

System Net Effects

System
Net Effects
by Criteria

Diversion Debt Charges
-- \$9,004,000
Percent --2.1%

Debt Charges
-- \$9,004,000
Percent --2.1%

Existing no effect.
Committed, dir cost
and expanded blue box
nominal to moderate
effect.
Wet/dry and mixed
waste high impact.

Available debt capacity
(OMB/MMA guideline)

Existing

Existing Debt Capacity
-- \$302 million

Debt Related to Diversion
-- \$0

Debt Related to Diversion
--\$0

Percent of capacity -- 0%

Percent of capacity -- 0%

Existing Committed

Debt Related to Diversion
-- \$2.8 million

Debt Related to Diversion
--\$2.8 million

Percent of capacity -- 0.9%

Percent of capacity -- 0.9%

SYSTEM NET EFFECTS TABLE

Y-10

Municipality: YORK REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Direct Cost A & B			Debt Related to Diversion -- \$2.8 million		Debt related to Diversion -- \$2.8 million	
			Percent of capacity -- 0.9%		Percent of capacity -- 0.9%	
Expanded Blue Box			Debt Related to Diversion -- \$10.0 million		Debt Related to Diversion -- \$10.0 million	
			Percent of capacity -- 3.3%		Percent of capacity --3.3%	
Wet/Dry			Debt Related to Diversion -- \$45.0 million		Debt Related to Diversion -- \$45.0 million	
			Percent of capacity -- 14.9%		Percent of capacity --14.9%	
Mixed Waste A			Debt Related to Diversion -- \$57.8 million		Debt Related to Diversion -- \$57.8 million	

SYSTEM NET EFFECTS TABLE

Y-11

Municipality: YORK REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Potential for Impact on Municipal Reserve Funds	Total amount of reserve funds	Mixed Waste B	Percent of capacity -- 19.2%		Percent of capacity -- 19.2%	
			Debt Related to Diversion -- \$57.8 million		Debt Related to Diversion -- \$57.8 million	
			Percent of capacity --19.2%		Percent of capacity --19.2%	Existing no effect Committed, dir cost and expanded blue box nominal to moderate effect. Wet/dry and mixed waste high impact.

SYSTEM NET EFFECTS TABLE

Y-12

Municipality: YORK REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
		Existing	Existing reserves & reserve funds -- \$286 million			
			NOT AFFECTED BY DIVERSION			
		Existing Committed				
			NOT AFFECTED BY DIVERSION			
		Direct Cost A				
			NOT AFFECTED BY DIVERSION			
		Direct Cost B				
			\$6.5 million additional -- 2.3%			
		Expanded Blue Box				
			NOT AFFECTED BY DIVERSION			
		Wet/Dry				
			NOT AFFECTED BY DIVERSION			
		Mixed Waste A				
			NOT AFFECTED BY DIVERSION			

SYSTEM NET EFFECTS TABLE

Municipality: YORK REGION

Criteria

Indicator
SystemMunicipal Finance
EffectMitigation/
Enhancement

System Net Effects

System
Net Effects
by Criteria

Mixed Waste B

NOT AFFECTED BY DIVERSION

Criteria not affected
by diversion except for
direct cost BReserves per
household

Existing

Existing reserves per
household -- \$1,919

NOT AFFECTED BY DIVERSION

Existing Committed

NOT AFFECTED BY DIVERSION

Direct Cost A

NOT AFFECTED BY DIVERSION

Direct Cost B

\$43.00 per household

SYSTEM NET EFFECTS TABLE

Y-14

Municipality: YORK REGION

Criteria Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
Reserves as a Percent of Expenditures	Expanded Blue Box		NOT AFFECTED BY DIVERSION		
	Wet/Dry		NOT AFFECTED BY DIVERSION		
	Mixed Waste A		NOT AFFECTED BY DIVERSION		
	Mixed Waste B		NOT AFFECTED BY DIVERSION		
	Existing	Reserves equal 65% of expenditures			
Existing Committed			NOT AFFECTED BY DIVERSION		
			NOT AFFECTED BY DIVERSION		
Direct Cost A			NOT AFFECTED BY DIVERSION		

SYSTEM NET EFFECTS TABLE

Y-15

Municipality: YORK REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
Potential for Impact on the level of municipal service	Total municipal wages, salaries, materials & contract expenditures per household	Direct Cost B	1.5% of expenditures			
		Expanded Blue Box	NOT AFFECTED BY DIVERSION			
		Wet/Dry	NOT AFFECTED BY DIVERSION			
		Mixed Waste A	NOT AFFECTED BY DIVERSION			
		Mixed Waste B	NOT AFFECTED BY DIVERSION			Criteria not affected by diversion except for direct cost

SYSTEM NET EFFECTS TABLE

Y-16

Municipality: YORK REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
		Existing	Operating expenditures equal \$2,940 per household			
			SERVICE LEVELS NOT AFFECTED BY DIVERSION			
		Existing Committed				
			SERVICE LEVELS NOT AFFECTED BY DIVERSION			
		Direct Cost A & B				
			SERVICE LEVELS NOT AFFECTED BY DIVERSION			
		Expanded Blue Box				
			SERVICE LEVELS NOT AFFECTED BY DIVERSION			
		Wet/Dry				
			SERVICE LEVELS NOT AFFECTED BY DIVERSION			
		Mixed Waste A				

SYSTEM NET EFFECTS TABLE

Municipality: YORK REGION

Criteria Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
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SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Mixed Waste B

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Criteria not affected by diversion

Current expenditures by department per household

Existing

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Existing Committed

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Direct Cost A & B

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

SYSTEM NET EFFECTS TABLE

Municipality: YORK REGION

Criteria

Indicator
System

Municipal Finance
Effect

Mitigation/
Enhancement

System Net Effects

System
Net Effects
by Criteria

Expanded Blue Box

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Wet/Dry

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Mixed Waste A

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Mixed Waste B

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Criteria not affected by
diversion

Potential for
Impact on the
Provincial
Treasury

Municipality: YORK REGION

Criteria	Indicator	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
	System				
	Amount of Provincial funding				
Potential for Impact on Private Sector Industries			Pending funding arrangements/ negotiations, the analysis was done in the absence of mitigation. However, a potential level of Provincial funding may approach 30% of capital costs.		Pending funding arrangements
	Amount of private sector funding				
	Existing		NOT AFFECTED BY DIVERSION		
	Existing Committed		NOT AFFECTED BY DIVERSION		
	Direct Cost A & B		NOT AFFECTED BY DIVERSION		
	Expanded Blue Box		NOT AFFECTED BY DIVERSION		

SYSTEM NET EFFECTS TABLE

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Municipality: YORK REGION

Criteria

Indicator
SystemMunicipal Finance
EffectMitigation/
Enhancement

System Net Effects

System
Net Effects
by Criteria

Wet/Dry NOT AFFECTED BY DIVERSION

Mixed Waste A NOT AFFECTED BY DIVERSION

Mixed Waste B NOT AFFECTED BY DIVERSION

Amount of private
sector costs

Existing NOT AFFECTED BY DIVERSION

Existing Committed NOT AFFECTED BY DIVERSION

Direct Cost A & B NOT AFFECTED BY DIVERSION

Expanded Blue Box NOT AFFECTED BY DIVERSION

Wet/Dry NOT AFFECTED BY DIVERSION

Mixed Waste A NOT AFFECTED BY DIVERSION

Mixed Waste B NOT AFFECTED BY DIVERSION

Municipality: YORK REGION

Criteria	Indicator	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
----------	-----------	--------------------------	------------------------	--------------------	--------------------------------

Amount of costs passed on through higher prices

Existing NOT AFFECTED BY DIVERSION

Existing Committed NOT AFFECTED BY DIVERSION

Direct Cost A & B NOT AFFECTED BY DIVERSION

Expanded Blue Box NOT AFFECTED BY DIVERSION

Wet/Dry NOT AFFECTED BY DIVERSION

Mixed Waste A NOT AFFECTED BY DIVERSION

Mixed Waste B NOT AFFECTED BY DIVERSION

Amount of private sector costs financed through

SYSTEM NET EFFECTS TABLE

Municipality: YORK REGION

Criteria

Indicator
SystemMunicipal Finance
EffectMitigation/
Enhancement

System Net Effects

System
Net Effects
by Criteriataxes, incentives,
economics, etc.

Existing

Total municipal taxes
paid by the commercial/
industrial sector
-- \$61.3 millionTaxes Related to
Diversion
-- \$668,000

Percent -- 1.1%

Taxes Related to Diversion
-- \$668,000

Percent -- 1.1%

Existing Committed

Taxes Related to Diversion
-- \$798,000

Percent -- 1.3%

Taxes Related to Diversion
-- \$798,000

Percent -- 1.3%

Direct Cost A & B

Taxes Related to Diversion
-- \$784,000

Percent -- 1.3%

Taxes Related to Diversion
-- \$784,000

Percent -- 1.3%

Expanded Blue Box

Taxes Related to Diversion

Taxes Related to Diversion

Municipality: YORK REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Wet/Dry			-- \$1,324,000		-- \$1,324,000	
			Percent -- 2.1%		Percent -- 2.1%	
			Taxes Related to Diversion -- \$4,803,000		Taxes Related to Diversion -- \$4,803,000	
			Percent -- 5.9%		Percent -- 5.9%	
	Mixed Waste A		Taxes Related to Diversion -- \$7,080,000		Taxes Related to Diversion -- \$7,080,000	
			Percent -- 11.5%		Percent -- 11.5%	
Mixed Waste B			Taxes Related to Diversion -- \$6,010,000		Taxes Related to Diversion -- \$6,010,000	
			Percent -- 9.7%		Percent -- 9.7%	Existing, committed, direct cost and expanded blue box -- low effect. Wet/dry --medium, mixed waste high effect.

REGION OF PEEL

SYSTEM NET EFFECTS TABLE

Municipality: PEEL REGION

Criteria

Indicator
SystemMunicipal Finance
EffectMitigation/
Enhancement

System Net Effects

System
Net Effects
by
CriteriaPotential for
Impact on
Local
TaxpayersTotal increase in the
net general municipal
levyTotal Municipal Taxation
-- \$335 million

See Impact on Provincial Treasury

Existing

Annual Cost
-- \$3,568,006Annual Cost
-- \$3,568,006

Percent -- 1.1%

Percent -- 1.1%

Existing Committed

Annual Cost
-- \$16,723,812Annual Cost
-- \$16,723,812

Percent -- 5.0%

Percent -- 5.0%

Direct Cost A

Annual Cost
-- \$18,589,217Annual Cost
-- \$18,589,217

Percent -- 5.5%

Percent -- 5.5%

Direct Cost B

Annual Cost
-- \$28,589,217Annual Cost
-- \$28,589,217

Percent -- 8.4%

Percent -- 8.4%

Expanded Blue Box

Annual Cost
-- \$18,817,032Annual Cost
-- \$18,817,032

SYSTEM NET EFFECTS TABLE

Municipality: PEEL REGION

Criteria

Indicator
SystemMunicipal Finance
EffectMitigation/
Enhancement

System Net Effects

System
Net Effects
by Criteria

Percent -- 5.6%

Percent -- 5.6%

Wet Dry

Annual Cost
-- \$17,943,844Annual Cost
-- \$17,943,844

Percent -- 4.3%

Percent -- 4.3%

Mixed Waste A Annual Cost

-- \$29,128,318

Annual Cost
-- \$29,128,318

Percent -- 5.4%

Percent -- 5.4%

Mixed Waste B Annual Cost

-- \$24,299,399

Annual Cost
-- \$24,299,399

Percent -- 7.3%

Percent -- 7.3%

Existing, committed
dir cost A and
expanded
blue box -- low impact.
Wet/dry & mixed waste
-- medium impact
Dir Cost B -- High

Net general municipal
levy, adjusted for
commercial/industrial
property assessment,
expressed on a per
household basis.

SYSTEM NET EFFECTS TABLE

Municipality: PEEL REGION

Criteria Indicator	System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
--------------------	--------	--------------------------	------------------------	--------------------	--------------------------------

Existing

Municipal taxation per household -- \$943	Municipal taxation per household -- \$943
Cost per household -- \$8.00	Cost per household -- \$8.00
Percent -- 0.8%	Percent --0.8%

Existing Committed

Cost per household -- \$28.00	Cost per household -- \$28.00
Percent -- 3.0%	Percent --3.0%

Direct Cost A

Cost per household -- \$31.00	Cost per household -- \$31.00
Percent -- 3.3%	Percent -- 3.3%

Direct Cost B

Cost per household -- \$46.00	Cost per household -- \$46.00
Percent -- 4.8%	Percent -- 4.8%

SYSTEM NET EFFECTS TABLE

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Municipality: PEEL REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Expanded Blue Box						
			Cost per household -- \$31.00		Cost per household -- \$31.00	
			Percent -- 3.3%		Percent -- 3.3%	
Wet/Dry						
			Cost per household -- \$30.00		Cost per household -- \$30.00	
			Percent -- 3.2%		Percent -- 3.2%	
Mixed Waste A						
			Cost per household -- \$47.00		Cost per household -- \$47.00	
			Percent -- 5.0%		Percent -- 5.0%	
Mixed Waste B						
			Cost per household -- \$40.00		Cost per household -- \$40.00	
			Percent -- 4.2%		Percent -- 4.2%	

Municipality: PEEL REGION

Criteria

Indicator
System

Municipal Finance
Effect

Mitigation/
Enhancement

System Net Effects

System
Net Effects
by Criteria

Existing system -- low
effect.
All other systems
medium

Potential for
Impact on the
Debt Burden of
the
municipality

Amount of Debenture
debt

Existing

Existing debt -- \$107.8 million See impact on
Provincial Treasury

Debt related to diversion
-- \$0

Debt related to diversion
-- \$0

Percent -- 0%

Percent -- 0%

Existing Committed

Debt related to diversion
-- \$90.3 million

Debt related to diversion
-- \$90.3 million

Percent -- 83.8%

Percent -- 83.8%

Direct Cost A & B

Debt related to diversion
-- \$90.3 million

Debt related to diversion
-- \$90.3 million

Percent -- 83.8%

Percent -- 83.8%

SYSTEM NET EFFECTS TABLE

Municipality: PEEL REGION

Criteria

Indicator
SystemMunicipal Finance
EffectMitigation/
Enhancement

System Net Effects

System
Net Effects
by Criteria

Expanded Blue Box

Debt related to diversion
-- \$90.3 millionDebt related to diversion
-- \$90.3 million

Percent -- 83.8%

Percent -- 83.8%

Wet/Dry

Debt related to diversion
-- \$90.3 millionDebt related to
-- \$90.3 million

Percent -- 83.8%

Percent -- 83.8%

Mixed Waste A

Debt related to diversion
-- \$91.0 millionDebt related to diversion
-- \$91.0 million

Percent -- 84.4%

Percent -- 84.4%

Mixed Waste B

Debt related to diversion
-- \$105.0 millionDebt related to diversion
-- \$105.0 million

Percent -- 97.4%

Percent -- 97.4%

Existing no effect.
All other systems
high impact.Annual debt payments
as a percent of

Municipality: PEEL REGION

Criteria

Indicator
SystemMunicipal Finance
EffectMitigation/
Enhancement

System Net Effects

System
Net Effects
by Criteriaexpenditures (OMB/
MMA guideline)

Existing

Existing Debt Charges
-- \$38.9 million

Existing Operating Expenditure

-- \$754.2 million

Existing Debt Charges as a % of Exp'ds

-- 5.2%

Diversion Debt Charges

-- \$0

Percent -- 0%

Debt Charges
-- \$0

Percent -- 0%

Existing Committed

Diversion Debt Charges

-- \$14,071,000

Percent -- 1.9%

Debt Charges
-- \$14,071,000

Percent -- 1.9%

Direct Cost A & B

Diversion Debt Charges

-- \$14,071,000

Percent -- 1.9%

Debt Charges
-- \$14,071,000

Percent -- 1.9%

SYSTEM NET EFFECTS TABLE

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Municipality: PEEL REGION

Criteria Indicator System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
Expanded Blue Box				
	Diversion Debt Charges -- \$14,071,000		Debt Charges -- \$14,701,000	
	Percent -- 1.9%		Percent -- 1.9%	
Wet/Dry				
	Diversion Debt Charges -- \$14,066,000		Debt Charges -- \$14,066,000	
	Percent -- 1.9%		Percent -- 1.9%	
Mixed Waste A				
	Diversion Debt Charges -- \$14,180,000		Debt Charges -- \$14,180,000	
	Percent -- 1.9%		Percent -- 1.9%	
Mixed Waste B				
	Diversion Debt Charges -- \$16,361,000		Debt Charges -- \$16,361,000	
	Percent -- 2.2%		Percent -- 2.2%	
				Existing no effect. all other systems medium impact.

SYSTEM NET EFFECTS TABLE

Municipality: PEEL REGION

Criteria Indicator	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
--------------------	--------------------------	------------------------	--------------------	--------------------------------

Available debt capacity
(OMB/MMA guideline)

Existing

Existing Debt Capacity
-- \$479 million

Debt Related to Diversion
-- \$0

Debt Related to Diversion
--\$0

Percent of capacity -- 0%

Percent of capacity -- 0%

Existing Committed

Debt Related to Diversion
-- \$90.3 million

Debt Related to Diversion
--\$90.3 million

Percent of capacity -- 18.9%

Percent of capacity -- 18.9%

Direct Cost A & B

Debt Related to Diversion
-- \$90.3 million

Debt related to Diversion
-- \$90.3 million

Percent of capacity -- 18.9%

Percent of capacity -- 18.9%

Expanded Blue Box

SYSTEM NET EFFECTS TABLE

Municipality: PEEL REGION

Criteria Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Wet/Dry		Debt Related to Diversion -- \$90.3 million		Debt Related to Diversion -- \$90.3 million	
		Percent of capacity -- 18.9%		Percent of capacity --18.9%	
		Debt Related to Diversion -- \$90.3 million		Debt Related to Diversion -- \$90.3 million	
		Percent of capacity -- 18.9%		Percent of capacity --18.9%	
Mixed Waste A		Debt Related to Diversion -- \$91.0 million		Debt Related to Diversion -- \$91.0 million	
		Percent of capacity -- 19.0%		Percent of capacity -- 19.0%	
Mixed Waste B		Debt Related to Diversion -- \$105.0 million		Debt Related to Diversion -- \$105.0 million	
		Percent of capacity --21.9%		Percent of capacity --21.9%	

Existing no effect.
All other systems
medium impact.

Municipality: PEEL REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
----------	-----------	--------	-----------------------------	----------------------------	--------------------	--------------------------------------

Potential for
Impact on
Municipal
Reserve Funds

Total amount of
reserve funds

Existing

Existing reserves &
reserve funds -- \$640 million

NOT AFFECTED BY DIVERSION

Existing Committed

NOT AFFECTED BY DIVERSION

Direct Cost A

NOT AFFECTED BY DIVERSION

Direct Cost B

\$10 million added
-- 1.5 % added

Expanded Blue Box

SYSTEM NET EFFECTS TABLE

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Municipality: PEEL REGION

Criteria Indicator System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
NOT AFFECTED BY DIVERSION				
Wet/Dry	Reserves reduced by \$10 million		Reserves reduced by \$10 million	
	Percent -- 1.5%		Percent -- 1.5%	
Mixed Waste A	Reserves reduced by \$39 million		Reserves reduced by \$39 million	
	Percent -- 6.1%		Percent -- 6.1%	
Mixed Waste B	Reserves reduced by \$45 million		Reserves reduced by \$45 million	
	Percent -- 7.0%		Percent -- 7.0%	Existing, committed and expanded blue box -- no effect Wet/dry and mixed waste nominal to moderate effect. Direct cost B nominal positive.

Municipality: PEEL REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
----------	-----------	--------	-----------------------------	----------------------------	--------------------	--------------------------------------

Reserves per household

Existing

Existing reserves per household -- \$2,857

NOT AFFECTED BY DIVERSION

Existing Committed

NOT AFFECTED BY DIVERSION

Direct Cost A

NOT AFFECTED BY DIVERSION

Direct Cost B

\$43.67 added per household -- 1.5%

Expanded Blue Box

NOT AFFECTED BY DIVERSION

Wet/Dry

Reserves reduced by \$44 per household Percent -- 1.5%

Reserves reduced by \$44 per household Percent -- 1.5%

SYSTEM NET EFFECTS TABLE

Municipality: PEEL REGION

Criteria
Indicator
SystemMunicipal Finance
EffectMitigation/
Enhancement

System Net Effects

System
Net Effects
by Criteria

Mixed Waste A

Reserves reduced by \$174 per household
Percent -- 6.1%

Reserves reduced by \$174 per household
Percent -- 6.1%

Mixed Waste B

Reserves reduced by \$201 per household
Percent -- 7.0%

Reserves reduced by \$201 per household
Percent -- 7.0%

Existing, committed
and expanded blue box
-- no effect.
Wet/dry and mixed
waste moderate
effect.
Direct Cost B positive

Reserves as a Percent
of Expenditures

Existing

Reserves equal 42% of
expenditures

NOT AFFECTED BY DIVERSION

Existing Committed

NOT AFFECTED BY DIVERSION

SYSTEM NET EFFECTS TABLE

Municipality: PEEL REGION

Criteria

Indicator
SystemMunicipal Finance
EffectMitigation/
Enhancement

System Net Effects

System
Net Effects
by
Criteria

Direct Cost A

NOT AFFECTED BY DIVERSION

Direct Cost B

Reserves added by 40.4% of expenditure

Reserves added by 40.4% of expenditure

Expanded Blue Box

NOT AFFECTED BY DIVERSION

Wet/Dry

Reserves reduced to 40.4% of expenditure

Reserves reduced to 40.4% of expenditure

Mixed Waste A

Reserves reduced to 35.9% of expenditure

Reserves reduced to 35.9% of expenditure

Mixed Waste B

Reserves reduced to 35.0% of expenditure

Reserves reduced to 35.0% of expenditure

Existing, committed,
direct cost A and
expanded blue box --
no effect.
Wet/dry and mixed
waste & Dir Cost B
-- moderate effect.

SYSTEM NET EFFECTS TABLE

P-16

Municipality: PEEL REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
----------	-----------	--------	-----------------------------	----------------------------	--------------------	--------------------------------------

Potential for
Impact on the
level of
municipal
service

Total municipal wages,
salaries, materials &
contract expenditures
per household

Existing

Operating expenditures
equal \$3,290 per
household

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Existing Committed

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Direct Cost A & B

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Expanded Blue Box

SYSTEM NET EFFECTS TABLE

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Municipality: PEEL REGION

Criteria

Indicator
SystemMunicipal Finance
EffectMitigation/
Enhancement

System Net Effects

System
Net Effects
by CriteriaSERVICE LEVELS
NOT AFFECTED BY DIVERSION

Wet/Dry

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Mixed Waste A

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

Mixed Waste B

SERVICE LEVELS
NOT AFFECTED BY DIVERSIONCriteria not affected by
diversionCurrent expenditures
by department per
household

Existing

SERVICE LEVELS
NOT AFFECTED BY DIVERSION

SYSTEM NET EFFECTS TABLE

Municipality: PEEL REGION

Criteria Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
	Existing Committed	SERVICE LEVELS NOT AFFECTED BY DIVERSION			
	Direct Cost A & B	SERVICE LEVELS NOT AFFECTED BY DIVERSION			
	Expanded Blue Box	SERVICE LEVELS NOT AFFECTED BY DIVERSION			
	Wet/Dry	SERVICE LEVELS NOT AFFECTED BY DIVERSION			
	Mixed Waste A	SERVICE LEVELS NOT AFFECTED BY DIVERSION			
	Mixed Waste B	SERVICE LEVELS NOT AFFECTED BY DIVERSION			

Municipality: PEEL REGION

Criteria	Indicator	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
----------	-----------	-----------------------------	----------------------------	--------------------	--------------------------------------

Potential for
Impact on the
Provincial
Treasury

Amount of Provincial
funding

Pending funding arrangements/
negotiations; the analysis was
done in the absence of mitigation.
However, a potential level of Provincial
funding may approach 30% of capital costs.

Criteria not affected by
diversion

Pending funding
arrangements

Potential for
Impact on
Private
Sector
Industries

Amount of private
sector funding

SYSTEM NET EFFECTS TABLE

Municipality: PEEL REGION

Criteria

Indicator
SystemMunicipal Finance
EffectMitigation/
Enhancement

System Net Effects

System
Net Effects
by
Criteria

Existing NOT AFFECTED BY DIVERSION

Existing Committed NOT AFFECTED BY DIVERSION

Direct Cost A & B NOT AFFECTED BY DIVERSION

Expanded Blue Box NOT AFFECTED BY DIVERSION

Wet/Dry NOT AFFECTED BY DIVERSION

Mixed Waste A NOT AFFECTED BY DIVERSION

Mixed Waste B NOT AFFECTED BY DIVERSION

Amount of private
sector costs

Existing NOT AFFECTED BY DIVERSION

Existing Committed NOT AFFECTED BY DIVERSION

Direct Cost A & B NOT AFFECTED BY DIVERSION

SYSTEM NET EFFECTS TABLE

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Municipality: PEEL REGION

Criteria

Indicator
System

Municipal Finance
Effect

Mitigation/
Enhancement

System Net Effects

System
Net Effects
by Criteria

Expanded Blue Box

NOT AFFECTED BY DIVERSION

Wet/Dry

NOT AFFECTED BY DIVERSION

Mixed Waste A

NOT AFFECTED BY DIVERSION

Mixed Waste B

NOT AFFECTED BY DIVERSION

Amount of costs
passed on through
higher prices

Existing

NOT AFFECTED BY DIVERSION

Existing Committed

NOT AFFECTED BY DIVERSION

Direct Cost A & B

NOT AFFECTED BY DIVERSION

Expanded Blue Box

NOT AFFECTED BY DIVERSION

Wet/Dry

NOT AFFECTED BY DIVERSION

Mixed Waste A

NOT AFFECTED BY DIVERSION

SYSTEM NET EFFECTS TABLE

Municipality: PEEL REGION

Criteria Indicator System	Municipal Finance Effect	Mitigation/Enhancement	System Net Effects	System Net Effects by Criteria
Mixed Waste B	NOT AFFECTED BY DIVERSION			
Amount of private sector costs financed through taxes, incentives, economics, etc.				
Existing	<p>Total municipal taxes paid by the commercial/industrial sector -- \$124.8 million</p> <p>Taxes Related to Diversion -- \$1.7 million</p> <p>Percent -- 1.4%</p>		<p>Taxes Related to Diversion -- \$1.7 million</p> <p>Percent -- 1.4%</p>	
Existing Committed	<p>Taxes Related to Diversion -- \$8,200,000</p> <p>Percent -- 6.5%</p>		<p>Taxes Related to Diversion -- \$8,200,000</p> <p>Percent -- 6.5%</p>	

SYSTEM NET EFFECTS TABLE

Municipality: PEEL REGION

Criteria	Indicator	Municipal Finance System	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
Direct Cost A & B		Taxes Related to Diversion -- \$9,100,000		Taxes Related to Diversion -- \$9,100,000	
		Percent -- 7.3%		Percent -- 7.3%	
	Expanded Blue Box				
Wet/Dry		Taxes Related to Diversion -- \$9,200,000		Taxes Related to Diversion -- \$9,200,000	
		Percent -- 7.3%		Percent -- 7.3%	
Mixed Waste A		Taxes Related to Diversion -- \$8,800,000		Taxes Related to Diversion -- \$8,800,000	
		Percent -- 7.1%		Percent -- 7.1%	
Mixed Waste B		Taxes Related to Diversion -- \$14,300,000		Taxes Related to Diversion -- \$14,300,000	
		Percent -- 11.4%		Percent -- 11.4%	
		Taxes Related to Diversion -- \$11,900,000		Taxes Related to Diversion -- \$11,900,000	

SYSTEM NET EFFECTS TABLE

Municipality: PEEL REGION

Criteria	Indicator	System	Municipal Finance Effect	Mitigation/ Enhancement	System Net Effects	System Net Effects by Criteria
			Percent -- 9.5%		Percent -- 9.5%	Existing -- low effect. All others -- high effect.

SCHEDULE E:
EXISTING SYSTEM
COST RECONCILITATION

EXISTING SYSTEM COST RECONCILIATION

The following table presents a reconciliation of the existing system costs for waste management used in Resource Integration Systems' technical appendix to costs utilized by Future Urban Research in this technical appendix. The purpose of the reconciliation is to demonstrate that both FUR and RIS are using the same system costs in their analysis but often the costs are described or termed in a manner consistent with practices specific to each discipline. The table demonstrates how the costs used by both consultant teams relate to each other.

The existing system costs utilized by Future Urban Research were derived from the 1992 operating budgets from each of the GTA municipalities and therefore are the costs that have to be reconciled to. It should be noted that it is possible to reconcile all the system costs developed in this technical appendix however the following table presents only the existing system. Other systems would follow a similar approach.

The table starts with the total system costs for waste management as per RIS's technical appendix. This system cost includes both waste diversion and disposal costs, but does not include overhead costs. Costs associated with solid or landfill waste are then removed from RIS figures to get net diversion costs. Overhead costs associated with diversion are then added to the RIS figures to arrive at the total net cost of diversion as per the 1992 operating budgets. Any savings that occur as a result of diverting waste rather than landfilling are then subtracted to arrive at the net annual levy. To arrive at the costs that the residents are actually taxed the commercial portion of property taxes is then removed. The resulting cost represents the residential portion for waste diversion, which FUR has expressed as a per household cost. This per household cost is used then to drive the effects analysis.

RECONCILIATION OF SYSTEM COSTS

	YORK REGION COSTS (\$)	RIS COST/ HSHLD	FUR COST/ HSHLD	METRO REGION COSTS (\$)	RIS COST/ HSHLD	FUR COST/ HSHLD	PEEL REGION COSTS (\$)	RIS COST/ HSHLD	FUR COST/ HSHLD	DURHAM REGION COSTS (\$)	RIS COST/ HSHLD	FUR COST/ HSHLD
# HOUSEHOLDS		161556	150485		871880	864555		240228	229670		147105	136135
RIS SYSTEM COST	20,664,606	128	137	114,524,074	131	132	42,114,066	175	183	20,555,515	140	151
LESS: LANDFILL DISPOSAL COST	(14,215,000)	(88)	(94)	(84,255,461)	(97)	(97)	(35,466,060)	(148)	(154)	(15,463,650)	(105)	(114)
DIVERSION COST	6,449,606	40	43	30,268,613	35	35	6,648,006	28	29	5,091,865	35	37
ADD: FUR OVERHEAD COST	1,321,095	8	9	13,966,129	16	16	2,000,000	8	9	0	0	0
NET COST AS PER BUDGETS	7,770,701	48	52	44,234,742	51	51	8,648,006	36	38	5,091,865	35	37
LESS: DISPOSAL SAVINGS FROM BUDGET	(5,544,000)	(34)	(37)	(20,487,605)	(23)	(24)	(5,080,000)	(21)	(22)	(2,997,000)	(20)	(22)
NET ANNUAL LEVY	2,226,701	14	15	23,747,137	27	27	3,568,008	15	16	2,094,865	14	15
LESS: COMMERCIAL PORTION %	(668,010)	(4)	(4)	(12,348,511)	(14)	(14)	(1,748,323)	(7)	(8)	(858,895)	(6)	(6)
	30.00%	30.00%	30.00%	52.00%	52.00%	52.00%	49.00%	49.00%	49.00%	41.00%	41.00%	41.00%
RESIDENTIAL COST PER HOUSEHOLD	1,558,691	10	10	11,398,628	13	13	1,819,683	8	8	1,235,970	8	9

SCHEDULE F:
BIBLIOGRAPHY

BIBLIOGRAPHY

HALTON

Halton Region

- 1993 Preliminary Rate Supported Budget (Books 1, 2 and 3).
- 1993 Preliminary Tax Supported Budget (Books 1, 2 and 3).
- 1992 Preliminary Tax Supported Operating and Capital Budget (Books 1, 2 and 3).
- 1992 Preliminary Rate Supported Budget and 1991 - 2000 Budget Forecast.
- 1992 Preliminary Tax Supported Budget and 1993 - 2001 Budget Forecast (Books 1, 2, 3 and 4).
- 1991 Preliminary Tax Supported Budget and 1991 - 2000 Budget Forecast (Books 1 & 2).
- 1991 Preliminary Rate Supported Budget and 1991 - 2000 Budget Forecast.
- 1990 Preliminary Rate Supported Budget and 1990 - 1995 Budget Forecast.
- 1990 Preliminary Tax Supported Budget and 1990 - 1995 Budget Forecast.
- 1992/93 Development Charges Study & Policy Proposals.
- 1992/93 Development Charges Study & Policy Proposals (Technical Appendix).
- 1991 - 1992 Corporate Annual Report.
- 1990 - 1991 Financial Report.
- 1991 Financial Information Return.
- 1990 Financial Information Return.

Burlington

- 1992 Capital Budget and 1993 - 2001 Capital Forecast.
- 1992 Current Budget.
- 1992 Current Budget - Department of Public Works - Waste Management.
- 1992 Current Budget - Garbage Collection.
- 1991 Financial Information Return.

Halton Hills

- 1992 Operating Budget, Capital Budget and Forecast to 2001.
- 1991 Operating Budget, Capital Budget and Forecast to 2001.
- 1990 Operating Budget, Capital Budget and Forecast to 1994.
- 1992 Waste Management Programs.
- 1991 Financial Report and Information Return.
- 1990 Financial Report and Information Return.
- 1992 Development Charges Policy Report.

Milton

1992 - 1996 Capital Budget and Forecast.

1991 - 1995 Capital Budget and Forecast.

1990 - 1994 Capital Budget and Forecast.

1992 Operating Budget.

1991 Operating Budget.

1990 Operating Budget.

1991 Financial Report.

1990 Financial Report.

Development Charge Policy Report - Draft for Discussion Purposes.

Oakville

1992 Operating Budget, 1992 Capital Budget and Forecast to 2001.

1991 Operating Budget, 1991 Capital Budget.

1991 Financial Report

1990 Financial Report

1990 Preliminary Operating and Capital Budget and Nine Year Capital Forecast Overview.

Development Charges Office Consolidation Report.

PEEL REGION**The Regional Municipality of Peel**

1993 Current Budget - Draft For Budget Subcommittee Review.

1992 Current Budget - Public Works, Rate Supported.

1991 Current Budget - Public Works Budget Highlights, Rate Supported.

1990 Current Budget - Public Works, Rate Supported.

1991 Development Charges Proposal - Finance Department.

1993 Capital Spending - Summary By Year & Capital Financing - Summary By Source.

1992 Capital Budget and Forecast to 1996, Waste Management - Capital Projects and Program Activities.

1991 Capital Budget and Forecast to 1995, Waste Management - Capital Projects and Program Activities.

1990 Capital Budget and Forecast to 1994, Waste Management - Capital Projects and Program Activities.

1992 Capital Budget and Forecast to 1996, Summary By Year.
 1991 Capital Budget and Forecast to 1995, Summary By Year.
 1990 Capital Budget and Forecast to 1994, Summary By Year.
 1992 Summary Financial Tables, Current Budget.
 1991 Summary Financial Tables, Current Budget.
 1990 Summary Financial Tables, Current Budget.
 1991 Financial Information Return.
 1990 Financial Information Return.
 1993 Current Budget - Waste Management Division - Comments By Section.
 1992 Current Budget - Waste Management Division - Comments By Section.
 1991 Current Budget - Waste Management Division - Comments By Section.
 1990 Current Budget - Waste Management Division - Comments By Section.
 1993 Disentanglement of Waste Management Cost/Benefit Implications.
 1991 Waste Management "Towards an Integrated System" Report.

Brampton

1993 Public Works Department Budget Summary - Garbage
 1992 Waste Reduction Statistics (Recycling, Salvaging, Composting).
 1991 Waste Reduction Statistics (Recycling, Salvaging, Composting).
 1990 Waste Reduction Statistics (Recycling, salvaging, Composting).
 1992 Source Separation Tonnage's - Recycling From Residential Blue Box and Multi-Residential Blue Bag Programs.

Mississauga

1993 - 2002 Capital Budget and Forecast - Executive Summary and City Manager's Recommendations.
 1993 - 2002 Capital Budget and Forecast - General Overview.
 1992 - 2001 Capital Budget and Forecast - General Overview.
 1993 Current Budget and City Manager's Recommendations.
 1992 Current Budget and City Manager's Recommendations.
 1991 Current Budget and City Manager's Recommendations.
 Waste Minimization Demonstration Pilot Project -.Six Month Status Report - Summary Sheet.

Caledon

User Pay Industrial/Commercial Recycling Program - 10 Month Draft Report.

METRO REGION

The Municipality of Metropolitan Toronto

1993 - 1997 Five Year Capital Works Program (Approved Capital Program).
 1993 - 1997 Five Year Capital Works Program Management Committee Member's Review Reports.
 1992 - 1996 Preliminary Five Year Capital Works Program Department /Agency Funding Requests.
 1991 - 1995 Preliminary Five Year Capital Works Program Department /Agency Funding Requests.
 1993 Operating Budget - Management Committee, Member's Review Reports.
 1992 Operating Budget - Management Committee, Member's Review Reports.
 1991 Operating Budget - Management Committee, Member's Review Reports.
 1990 Operating Budget - Management Committee, Member's Review Reports.
 1991 Financial Statements
 1990 Financial Statements
 1991 Financial Information Return
 1990 Financial Information Return
 1993 Operating Budget - Solid Waste Division - Management Committee Member's Report.
 1993 - 1997 Submitted Capital Program - Solid Waste Management.

East York

1992 Financial Report.
 1991 Financial Report.
 1990 Financial Report.
 1992 Financial Information Return.
 1991 Financial Information Return.
 1992 Current Budget Report.
 1991 Current Budget Report.
 1990 Current Budget Report.
 1992 Current Operating Budget.
 1991 Current Operating Budget.
 1991 - 1993 Capital Program.
 1992 - 1996 Capital Program.
 1990 - 1992 Capital Program.

York

1992 Capital Budget.
 1991 Capital Budget.
 1992 Current Budget.
 1991 Current Budget.
 1990 Current Budget.
 1991 Financial Information Return
 1990 Financial Information Return
 1991 Consolidated Financial Statements
 1989 - 1993 Budgets For Sanitation and Recycling Sections.
 Development Charge Policy Report - Incomplete Draft for Discussion Purposes.

North York

1991 Capital Budget.
 1990 Capital Budget.
 1993 Current Budget Estimates - Public Works Department, Solid Waste Collection.
 1992 Current Budget Estimates.
 1991 Current Budget Estimates.
 1990 Current Budget Estimates.
 1992 Proposal to Replace the City's Sewage Impost Levy With a Charge Under the Development Charges Act, 1989.
 1991 Development Charge Policy Report.
 1991 Financial Report.
 1991 Financial Report.
 1991 Analysis of Revenue Fund Revenues.
 1990 Analysis of Revenue Fund Revenues.

6

Toronto

1992 Operating Budget.
 1991 Operating Budget.
 1990 Operating Budget.
 1990 Financial Information Return.
 1991 Financial Report.
 1990 Financial Report.

Scarborough

1993 Service Level Budget Estimates Sub-Activity by Object Detail.
 1993 Corporate Capital Budget and Five Year Capital Plan.
 1992 Corporate Capital Budget and Five Year Capital Plan.
 1991 Corporate Capital Budget and Five Year Capital Plan.
 1990 Corporate Capital Budget and Five Year Capital Plan.
 1992 Budget Report.
 1991 Financial Information Return.
 1990 Financial Information Return.
 1991 Development Charges.

Etobicoke

1992 - 2000 Capital Budget.
 1991 - 1999 Capital Budget.
 1990 - 1998 Capital Budget.
 1992 Development Charges Study.
 1992 - 2000 Capital Budget.
 1991 Capital Budget.
 1991 Current Budget.
 1992 Budget.
 1990 Budget.
 1992 Etobicoke Hydro Development Charges.
 1992 Proposed Amendments to the Development Charges By - Law No. 1991-153.
 1991 Financial Statements and Auditors' Report.
 1990 Financial Statements and Auditors' Report.
 1991 Financial Information Return.
 1990 Financial Information Return.

YORK REGION**York Region**

1992 Operating and Capital Budgets, Transportation and Environmental Services.
 The Regional Municipality of York Development Charge Policy Report, November 1991.
 1991 Annual Financial Report.

The Regional Municipality of York 1991 Budget.

1990 Estimates Report.

1993 Budget Detail for Transportation and Environmental Services Committee and Regional Council

Richmond Hill

1992 Operating and Capital Budgets, and 1992 to 2001 Capital Forecast.

1992 Development Charges Study.

1991 Financial Information Return.

1990 Financial Information Return.

1991 Continuity of Reserves and Reserve Funds.

Newmarket

1992 Budget.

1991 Budget.

1990 Budget.

1992 Pilot Composting Program Report.

1991 Financial Statement and Financial Information Return.

1990 Financial Statement and Financial Information Return.

1989 Financial Statement and Financial Information Return.

Town of East Gwillimbury

Development Charges Consolidated Study, 1992.

Budget Summary, 1991.

Budget Summary, 1992.

1991 Capital Budget.

1992 Capital Budget.

Tender No. M-92-1 For the Collection and Hauling of Waste Recyclables.

1990 Financial Information Return.

1991 Financial Information Return.

Town of Aurora

Budget Summary, 1990.

Budget Summary, 1991.

Budget Summary, 1992.

1990 Capital Budget.

1991 Capital Budget.

1992 Capital Budget.

Financial Statements, Town of Aurora, 1990.

Financial Statements, Town of Aurora, 1991.

Town of Aurora, Addendum to Development Charges Policy Report.

1991 Financial Information Return.

Town of Markham

1992 Budget Worksheet - Works Commission, Consolidated Waste Management.

Town of Georgina

1992 Approved Budget.

Financial Report for the year ended December 31, 1991.

1992 Tax Information.

Report # t92 -13.

Development Charges Policy Report.

Vaughan

1990 Capital Budget.

1991 Capital Budget.

1992 Capital Budget.

1991 Current Budget.

1992 Operating Budget.

1990 Financial Information Return.

1991 Financial Information Return.

Whitchurch/Stouffville

1992 General operating Budget
1993 - 1997 Capital Budget.
1990 Financial Information Return.
1991 Financial Information Return.

King

1990 Consolidated Revenue Fund Budget.
1991 Consolidated Revenue Fund Budget.
1992 Consolidated Revenue Fund Budget.
Development Charges Report (section from it).
1990 Capital Budget.
1991 Capital Budget.
1992 Capital Budget.
1991 Financial Information Return.

SCHEDULE G:
LIST OF
PERSONS CONTACTED

List of Persons Contacted:**Region of Halton**

Milton	D. Birkett, Director of Budgets and Finance
	M. Skora, Financial Analyst
	P. Antoniow, Engineering Department
	J. McQueen, Treasurer
Halton Hills	P. Sargeant, Recycling Co-ordinator
Burlington	P. Anderson, Public Works
Oakville	M. Jones, Solid Waste Manager

Region of Durham

P. Richards, Budgets and Economic Planning
J. Clapp, Director of Finance

Region of Peel

	L. Eason, Commissioner of Finance
	D. Markle, Commissioner of Public Works
	R. Hatton, Financial Policy Analyst
	G. Williams, Manager Waste Reduction and Recovery
	L. Morgan-Fraser Technical Analyst, Waste Reduction
Caledon	B. Moore, Director of Public Works
	M. Jones, Treasurers Office
Brampton	S. Steward, Operations Supervisor, Public Works
Mississauga	T. Long, Recycling Co-ordinator
	M. Masliwek, Manager Financial Services

Region of York

	J. Pennachetti, Commissioner of Finance
	J. Flewelling, Waste Management Engineer
Richmond Hill	B. Morrison, Solid Waste Manager
Newmarket	R. Prentice, Municipal Clerk
Georgina	J. Carr, Town Offices
	S. Armstrong, Town Offices
East Gwillimbury	F. Reid, Treasurer
	W. Hunt, Town Engineer
Aurora	P. Nog, Program Manager
Whitchurch-Stouffville	P. Whitehouse, Public Works Department
Vaughan	E. Simmons, Waste Management Co-ordinator
	Mr. Birkholder, Finance Department
Markham	J. Anbinder, Commission of Public Works
	G. Wilson, Commissioner of Finance
	N. Mortson, Director of Waste Management
King	D. Younge, Treasurer

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Metro Toronto

Toronto

A. Pollock, Works Department
C. Ling, Management Services

York

D. Altman, Co-ordinator of Budgets, Planning and Policy
S. Chamberland, Director of Budgets and Systems
G. Clarke, Treasurer
C. Rodrigo, Clerk
E. Benedetti-Clausser, Finance Department
C. Hill, Finance Department
E. Nichols, Treasurer

East York
Etobicoke
Scarborough
North York

L. Turner, Budgets Director

OMMRI

J. Hruska

Waste Reduction Office

J. Lee

